#### BLUE MOUNTAINS SPELEOLOGICAL CLUB P. 3. B X 37 GLENBRUOK, N.S.W. 2773

## DOWN UNDER

Official Journal of the Blue Mountains' Speleological Club

Post Office Box 37, GLENBROOK. N.S.W. 2773.

Volume 1, Number 1, November, 1968. Price 50¢

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This is the first issue of "Down Under" the journal of the Blue Mountains' Speleological Club. It is designed to inform other Clubs and Societies of our activities, as we intend to apply once more for membership of the A.S.F. at the Goolwa (S.A.) meeting. We hope A.S.F. members will form an independent opinion about B.M.S.C. and vote on our application accordingly.

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DITORIAL

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First, some history. B.M.S.C. began in 1965 with a group from the Glenbrook-Blaxland area doing some "social caving". This soon led to the formation of a Club and the foundation President, Graham (now Dr.) Nelson, lodged the Club's membership application at the Canberra meeting of the A.S.F. in 1966. However, this was rejected.

We survived this setback and proceeded to get our knowledge and experience in caving as best we could, without the benefit of the A.S.F. In over three years of existence cur financial membership (full and prospectives) has grown to 24. The average member is aged approximately 26 and married. Thus the Club has, generally, a high level of maturity and a responsible attitude. One member is a full-time Ranger with the Blue Mountains National Park. Average attendance on the Club's 20 trips so far in 1968 has been six.

The Club has done useful work in the Tuglow area, prospecting outcrops of limestone on Dunfields Farm, North Tuglow Bluff, Horseshoe Creek and Hollander's River. It probably has the discovery of small caves in the main Tuglow outcrop and on Harry's River to its credit. Exploration is continuing in these general areas and in the Blue Rocks area. A summary of trip reports later in this magazine gives more details.

To ensure proper climbing, belaying and safety, techniques are used; several special practice sessions have been held this year in Glenbrook Gorge. Some of these have been at night to simulate cave conditions. Similarly, a film night on caving and rockclimbing has been held. Some assistance has been given to a local Scout Troop in climbing and abseiling. Various items of group equipment such as a 90 foot electron ladder, spare nickel-alkalai batteries, 120 foot nylon rope, etc.have been acquired.

B.M.S.C. does not pretend to have yet done work of great scientific research value but enquiries from member societies reveal that we are not alone in this. Like 99% of other cavers, we cave firstly because we enjoy it-- whether it is the photographic, exploration or discovery angles that appeal. Secondly, we have a proper regard for preservation of our natural environment particularly caves. Thirdly, we feel that the wider conservation and scientific aims of speleology can best be achieved through co-operation with others in a body such as the A.S.F.

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However, if the A.S.F. continues to reject a Club such as ours, can it claim to be a truly representative national body? We believe our continued existence and growth merit admission to the A.S.F. However, whether inside or outside the A.S.F., B.M.S.C. will continue and grow. Obviously, though, cur activity and contribution to speleology will be more effective if co-ordinated with that of other Clubs through the A.S.F. Can we count on the support of your Society at Goolwa in December?

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Ken Pickering, PRESIDENT.

#### CONSTITUTION OF THE BLUE MOUNTAINS SPELEOLOGICAL CLUB

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 NAME

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The name of the club shall be the "BLUE MOUNTAINS SPELEOLOGICAL CLUB".

To advance speleology as a science and as a sport and to promote conservation and safety in caves among speleologists living in the Blue Mountains area.

#### 3. MEMBERSHIP

- a) <u>Members</u>. Persons who have completed not less than thirty hours in caves or not less than three trips and who have sufficient knowledge of first aid, caving and rescue techniques and appreciation of conservation, shall be eligible for consideration by the Committee for full membership of B.M.S.C.
- b) <u>Prospective Members</u>. Persons who in the opinion of the Committee have the ability to become full members of the club may be admitted to prospective membership.
- c) <u>Discipline</u>. The Committee may suspend the membership of a person alleged to either have breached the rules of the club or to have refused to obey the decisions of the Committee or General Meeting and whose alleged conduct reflects unfavourably on the club.
- d) <u>Fees</u>. All members and prospective members shall pay an annual membership fee as determined annually at the Annual General Meeting.

#### 4. MEETINGS

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a) An Annual General Meeting shall be called by the Secretary sometime in the first three months of each year. At the A.G.M. the following officers shall be elected by secret ballot of full members -

> President Secretary Treasurer Equipment Officer.

Nominations shall be called for at the A.G.M. The nominee shall be a

full member of the club. The nominee receiving most votes shall be declared elected. The chairman shall have a casting vote.

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- - c) Other General Meetings may be held from time to time as determined by the Committee. The Secretary shall call a Special General Meeting at the request of any member for the purpose of an appeal against any decision of the Committee.
  - d) The Secretary shall notify all members and prospective members in writing at least fourteen (14) days before any General Meeting. He shall also notify all Committee members at least fourteen (14) days before each Committee Meeting.
  - e) The President shall chair all meetings at which he is present.
  - f) A quorum shall be one third of the number of full members at General Meetings and three Committee Members at Committee Meetings.
  - g) Only full members may vote at General Meetings but prospective members have the right to express opinions on any matter being discussed.
  - h) The Treasurer shall submit a Financial Statement at each Committee Meeting and at the A.G.M.

#### TRIPS

5.

- a) The Committee shall organise official club trips at least two (2) weeks in advance. Details of trips and trip leaders shall be mailed to all members and prospective members.
- b) Any full member may organise trips other than the above. These will be considered official trips if approval is given by at least two (2) Committee Members.
- c) A limit on the number attending an official trip shall only be imposed where either the nature of the area or the nature of the proposed work makes such a limit essential. Provided that such a limit on any trip has not been filled, any member of the club shall be entitled to join such a trip.

d) All members shall notify the trip leader of their intended participation in a trip, and shall obey the reasonable requests of the trip leader while on that trip.

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e) The Committee shall organise at least one trip or lecture night annually to provide search and rescue training for members and prospective members.

#### 6. TRIP LEADERS

The duties of trip leaders shall be -

- a) To submit a request, signed by the Secretary, for permission to visit the area, if it is under restricted access, at least ten (10) days before the proposed departure date.
- b) To make sure that any prospective member or non-member attending the trip is issued with a copy of the B.M.S.C. Code of Ethics and undertakes to abide by the rules of the club.
- c) To be thoroughly conversant with the firelighting and other regulations governing the area he is visiting and to see that the trip abides by these regulations.
- d) To forward a trip report to the Committee within fourteen (14) days of completion of the trip and to forward suitably worded report of all tourist cave trips to the Director of Tourist Activities.
- e) To see that all B.M.S.C. equipment borrowed for the trip is returned to the Equipment Officer within seven (7) days of the completion of the trip.
- f) To organise transport for the trip.

#### 7. EQUIPMENT OFFICER

- a) The Equipment Officer shall buy or have made, equipment as directed by the Committee.
- b) He shall loan club equipment to persons participating in official club trips.
- c) He shall inspect equipment on issue and return.
- d) He shall ensure that equipment damaged, lost or not returned, is replaced, repaired or paid for by the person responsible for its care. The Committee may, at its discretion, waive the above

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8. CO-OPERATION WITH OTHER ORGANISATIONS

The Club will affiliate with the Australian Speleological Federation and other caving and conservation organisations which have aims similar to ours. The Committee shall appoint suitable members to represent the club at meetings and conferences of these organisations whenever this is possible.

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9. CHANGES TO THE CONSTITUTION

Changes to this Constitution shall only be made by at least a 60% vote of members present at a General Meeting of the club. Notice of such a motion to change the Constitution shall be given by the Secretary to all members at least fourteen (14) days before such a General Meeting.

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COMMITTEE

PRESIDENT -Ken Pickering: 11 Brooklands Road, Glenbrook 2773 Tel. (Priv) 71992 (Bus.) 20248 Ext. 415

SECRETARY

Ian Bogg:

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29 Scott Street, Springwood 2777 Tel. (Priv) 512001 (Bus.) 6317722

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TREASURER -

Stan Thomas: 33 Queensbury Road, Penshurst 2222

Tel. (Priv) 571849

EQUIPMENT OFFICER -

Ron Thomas:

22 Olivet Street, Glenbrook 2773 Tel. (Priv) 710324

NOTE: ALL

ALL correspondence should be addressed to -The Secretary, Post Office Box 37,

GLENBROOK. 2773.

FINANCIAL MEMBERS

,

as at 21st October, 1968.

-		
NAME	and <u>ADDRESS</u> and the signification of the	TELEPHONE
JOHN GALLARD (M) DE CONTRACTOR	22 Gregory Terrace, Lapston 2773	710507
KEN PICKERING (M)	11 Brooklands Road, Glenbrook 2773	71992
GRAHAM NELSON (M)	24 Explorers Road, Glenbrook 2773	6230341(Bus.)
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ROGER PETERS (M)	21 Brook Road, Glenbrook 2773	6227111(Bus.)
IAN BOGG (M)	29 Scott Street, Springwood 2777	512001
KERRY HOWARD (M)	44 Edgbaston Road, Deverly Hills 2209	573471
BOB JARVIS (M)	Flat 1/12 Bando Road, Cronulla 2230	571849
BILL DEVINE SNR.(M)	17 Cough on Road, Blaxland 2774	
BILL DEVINE JNR.(M)	17 Coughlan Road, Blaxland 2774	
DAVE WARD (M)	Post Office Nor-86, Engadine 2233	
GARY COOPER (M)	26 Rogers Street, Lakemba 2195	ener de la filosofia de la composición de la composición de la composición de la composición de la composición En la composición de la
GEOFF KEEFE (M)	125 Binnelong Street, Murrumburrah 2595	and a second s
GRAHAM MIDDLETON (PM)	22 Lennox Streets Glaprook 2773	710427
KEITH FORD (PM)	18 Weaver Street, Eyde 2112	
BILL DYER (PM)	1 Cowper Street, Harris Park 2150	
BOB ARMITAGE (PM) of base.	7 Park Avenue, Springwood 2777	511949
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JOHN DRAKE (PM)	1 Rose Crescent, Nth. Parramatta 2151	6301730

NOTE: (M) Full Member

(PM) Prospective Member

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#### FINANCIAL REPORT

- 9 -

#### as at 21st October, 1968.

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Membership Fees 1968	38	00	Nickel Iron Bat	teries deposed 6	00
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Sale of Club Badges	3	00	Postage	6	00
Proceeds Film Night	11	74	Maps	1	50
			Magazine Subscr	iptions, Handbook 8	50
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as at 21st October, 1968.

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### EQUIPMENT

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- $1\frac{3}{4}$ " x 120' manilla ropes,
  - 3 30' ladders,
    - pair field phones,
    - aneroid barometer (reads heights to 10"),
  - 5 miners lamps,
  - 1 thermometer, set to not less in
    - 4 jeep shovels,
    - 2 crow bars,
    - 2 star drills.

#### ORDINANCE SURVEY MAPS

Glen Alice:	Sheet 8931-1V, Edition 1, Series R753, 1963
Glen Davis:	Sheet 8931-1, Edition 1, Series R753, 1963
Wallerawang:	Sheet No. 408, Zone 8, 1935
Jenolan:	Sheet No. 421, Zone 8, 1942
Jenolan:	Sheet 8930-111-N, Zone 8, 1964
Wagga Wagga:	Sheet S155-15, Edition 1, Series R502, 1960
Shooters Hill:	Provisional issue Sheet No. 8830-11-S, 1962
Canowindra:	Sheet No. 412, Zone 8, 1942
Blue Mountains and	Burragorang Valley Tourist Map
Gundungura Map:	Sydney University Rover Crew, Edition 2, 1966
Hollanders River:	Myles Dunphy
Cliefden:	Geological Survey Map, Department of Mines Survey
	report No. 11.

#### CAVE MAPS

#### AREA

## WEE JASPER:

"Dip" "Gong" "Punchbowl" "Signature"

CAVE

#### SOURCE

Canberra Speleological Society Canberra Speleological Society Unknown Unknown

AREA	CAVE	SOURCE
COLONG:	"Colong Cave"	Clifton Gardens Rover Crew
TIMOR:	"Belfry" "Helictite" "Main Top Cave"	Unknown Unknown Unknown
TUGLOW: eat formed toel of freenteven edt. he vatines	"Main Cave River Level" "Main Entrance Shaft ) and Diamond Mine" )	Sydney University Rover Crew Leoning of the second off 1st Mortdale Senior Scout Troop.

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AU REVOIR

Past President and current Secretary of B.M.S.C., Graham Nelson, is leaving with his wife Judy and two sons, Robert and Lindsay, in January 1969. He is going to put his new Ph.D to work on a radio telescope in Puerto Rico. We hear there is plenty of limestone there, so things look bright for the Puerto Rico branch of B.M.S.C.!

(The Committeens to

Ian Bogg will act as Secretary until the A.G.M. in January.

# PRESS CLIPPINGS

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## (<u>A Contrast</u>)

Sydney Morning Herald - 29th October, 1968 - Australia

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12 - 1st . ortdels Semior Scout Troop.

"The Secretary of the Local Government Border Rivers Project Committee said that 4232 signatures were on a petition to the Queensland Government to halt the Pikes Creek project until another lock was made at the merits of the dam and the tourist value of the caves."

"What had been thought to be a small agitation by a few people to preserve the Texas Caves at the expense of the dam has blown into something bigger."

"We must use all means in our power to defeat this threat to the development and stability to Border Rivers area." <u>Delegates to the Committee</u> <u>meeting at Goondiwindi said the national interest was far more vital than a</u> <u>few dirty, inaccessible caves</u>.

(The Committee is now preparing a case for the Government on the value of the project with regard to increased farm production).

#### Sydney Morning Herald - 25th October, 1968 - France

"Two volunteers went down the 200 foot deep Olivier Cave in the Massif de l'Audiberghe, 37 miles north of Nice on August 22nd to spend about 4 months underground to test their reactions in conditions which future space travellers might have to endure."

he is going to got his now High to work on a radio tolescope in Buerto Hico.

"After the first 30 days, Philippe Engleder, 30, fell into an almost exactly regular 48 hour cycle, working for up to 36 hours at a stretch and then sleeping for about 12 hours. This is the most striking result of the experiment so far."

#### BOOK REVIEW

"Potholing and Caving" by Don Robinson (40 pages - 65¢)

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This booklet was first published in 1967 and is one of the "Know the Game" series, similar to "Rock Climbing" with which some speleos will be familiar. Though written for English conditions there is much good basic information on personal equipment, group equipment, cave formations and caving techniques which is applicable here. According to the blurb, the author is a University Lecturer in physical education and an experienced caver, well known for cave-rescue work. Ho stresses the importance of safety and conservation and has written the book with assistance from the Council of Northern Caving Clubs.

It does not pretend to be a comprehensive textbook like "British Caving" by the British Cave Research Group, but it still contains useful hints, such as the danger of climbing ladd us while wearing boots with hook-lacings, the danger to aluminium ladder rungs from tricounis, etc. One interesting piece of equipment mentioned is a "stemple", made of short lengths of metal pipe slotted together with one screwed section similar to a small car jack. These are used as belay points in narrow fissures, like an artificial chock stone, or for temporarily shoring up the sides of a dangerous entrance shaft, etc.

It is interesting to note that polypropylene and polyethylene ropes are recommended as well as nylon, although they soften at much lower temperatures (approx. 150°C and 125°C respectively) than does nylon (approx. 235°C).

The booklet is profucely illustrated with clear drawings, especially in the section on ladder climbing and belaying.

This club has often discussed the need for an elementary textbook to supplement the practical requirements for club membership. In the opinion of this reviewer, this is "the book". It is well written and concise, yet it covers all the ground necessary for a beginner and it has the added advantage of being inexpensive.

#### K. Pickering.

YESSABAH CAVES

- 14 -

#### by Ron Thomas

obinson (40 pages - 656)

Situated some 14 miles out of Kempsey and set in a rain forest, these caves are completely different from those found in the ranges back of Sydney. The usual quietness that generally surrounds limestone outcrops is shattered here by the deafening noise of the crushing works. Slowly but surel another set of caves are vanishing forever from the face of the earth, as in powder form, the limestone is transported away for agricultural purposes. This outcrop is interesting because in only half a day we found and explored seven caves; some small some average sizes. Two others we were told about but time did not permit us to look any further.

In one of the larger caves, on every ledge and in every crevise, were sea shells sitting loosely on the rocks. A strange sight when you compare them with other caves.

A sample of rock given to me by workman showed a shell perfectly kept and preserved. It was on this sight workman uncarthed an egg complete and preserved by the limestone.

After exploring several caves, Graham Nelson and myself crawled out in the sunshine, stretched out and began quietly to eat an orange.

Some 100 feet below, men began shouting orders which did not make much sense to us. Then it happened! Right underneath us, it seemed, a terrific explosion rocked the outprop, 2 - 3 - 4 we wondered how many more. Dust and pieces of rock fell all around us, we were too petrified to move, 5 - 6 - 7 then silence.

Boy! What a scare we had. Just as well we were not in the caves at t time. I am sure the thought of being burried alive would have been far worse. A very interesting trip indeed. tas govi rudenietde) bies who they filler by Graham Nelson

Miners batteries and lamps are used by many speleologists because they have obviously been designed for conditions similar to those met with in caves. In many ways they are superior to the traditional carbide lamp. Their main disadvantage is that they have a limited capacity before requiring recharging. This is not serious where caves are situated near roads, as the batteries can then be charged overnight from car batteries. However, because most caves are in remote areas it is essential that batteries be well cared for so that the maximum possible capacity is maintained.

There are two main types of miner's batteries in general use; i.e., (a) lead-Acid, and (b) alkaline or nickel iron. Although similar in appearance there are considerable differences between the two types.

#### LEAD ACID BATTERIES

These batteries have two cells which use sulphuric acid as the electrolyte. The cells are enabled to "breathe" during charging and discharging through two capillary tubes which end on the side of the battery away from the wearer. These tubes can leak sulphuric acid if the battery is not stood upright during charging or during particularly rough handling (e.g. when travelling laying down in a car). This leakage is aggravated if the battery is overfilled with electrolyte. The electrolyte should be checked periodically and topped up with distilled water as required. The manufacturers suggest that the battery be tilted at about 20° to the horizontal and topped up with distilled water to the level of the filling hole in the side of the battery.

Lead-acid batteries are particularly susceptible to damage from complete discharge or from over-charging. Both of these missuses cause a reduction in the light capacity of the battery. The rate at which these batteries are charged is not too critical. The manufacturers recommend a charging rate of 1 amp, but up to double this rate could safely be used on occasions when a quick charge is required. When charging at a 1 amp rate from a completely discharged condition, the charging time should be about 13 hours for the smaller capacity batteries and 17 hours for the larger ones. When not in use for an extended period, leadacid batteries should be discharged and recharged about once a week if possible. It is also a good idea to drain the acid from the cells, thoroughly wash them out with water, and then refill with new acid (obtainable from any garage) about every two years.

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ALKALINE OR NICKEL IRON BATTERIES of poke or some the relied of the second states of the seco

These batteries may have three or four cells, but have about the same voltage as a two cell lead-acid battery. The electrolyte in this case is potassium hydroxide. The correct concentration for this electrolyte is obtained by dissolving about 0.41bs of potassium hydroxide in a pint of water. Alkaline batteries normally have lids which completely seal off the fluid in the cells during use. This prevents any spillage of this corrosive material. It is very important however that the lid be opened during charging and when not in use as gas is given off from the electrolyte which can build up high pressures and damage your battery.

Alkaline batteries are not easily damaged by overcharging or completely discharging but they are very susceptible to damage if charged too rapidly. A charging rate of 1 amp should not be exceeded. If these batteries are charged toc rapidly, a black sludge may form on the bottom of the cells and short circuit the plates. If this occurrs, or if for any other reason looks grey in colour, the electrolyte should be washed out with water and replaced. Old alkalai batteries tend to lose their charge if stored even for only a few days after charging. It is therefore preferable to charge them as near to the time of usage as possible. The level of electrolyte in the cells should be checked periodically and "topped up" with water so as to just cover the plates. <u>CHARGING CAVING BATTERIES FROM CAR BATTERIES</u>

Resistors can be purchased which allow one caving battery or two in series to be charged from a 12 volt car battery. For a charging rate of about 0.8 amps, the single battery requires a 10 OHM, 20 watt resistor, and two batteries in series require a 5 OHM, 10 watt resistor. The connections for charging one or two batteries are shown below. Normally only one set of caving batteries should be charged off a standard 12 volt car battery, but a second lot may also be charged if your car battery is fully charged and in good condition.

and 17 hours for the larger ower. Much not in use for an extended period, let act butteries static be discharged one recepted once a weak if possible if is also a good idea to drain the cald from the calls, thereaghly seen then



Within the club at the present time, there is not sufficient attention being paid to the handling and maintenance of equipment, especially our ropes and ladders. This equipment is quite expensive to purchase or replace, more importantly, ropes and ladders have been known to break.

With the accent of safety in caves, it is a must that the club equipment be handled with care and kept in first class condition.

## (12) Enota must not be left in ropes as permanent damage will result: 23908

Repes must be subjected to close and detailed inspection after use for evidence of wear or damage. External wear is signified by slight burring of the fibres, this does not weaken a rope as much as internal wear and damage. Internal inspection may be carried out by gently opening the strands of the rope and examining the insides for wear or damage due to abrasive particles such as sand, small rocks etc. If there is internal wear it is a warning of age and weakness.

Wear or damage can be minimised by careful handling, i.e., -

- (1) Do not tread on the rope or allow rocks to fallow it.
- (2) Ensure that suitable packing is used to prevent the rope coming in contact with sharp rocks etc.
- (3) Ropes must be kept clear of acids and other deleterious chemicals and fumes.
- (4) Never leave a rope exposed to strong sunlight for long periods.
- (5) Never dry a rope near a fire or expose it to extreme heat.
  - (6) Pack the rope in a rucksack, sugarbag etc. to prevent fraying or cutting

during caving trips.

- (7) If a new rope is "kinky" and stiff to handle it should be coiled left handed, the end passed through the coil and pulled through. If this is repeated three or four times the "kinks" will be removed. Under ro circumstances should the rope be stretched to remove the "kinks" as this may permanently damage the resilience of the rope.
- (8) The ends should be properly whipped or renewed as necessary to prevent fraying of the ends. A good secure whipping is that known as the sailmakers
- (9) Ends of nylon ropes should either be fused together or fitted with rubber sleeves to prevent fraying.
- (10) Ropes must be kept dry as possible and not be coiled or put away while wet or they will become mildewed very quickly. Mildew will weaken a rope dangerously and can be detected by a musty smell. Mildew can be prevented by hanging a wet rope in locse loops in an airy place till dry then stored in a place that is well ventilated.
- (11) A rope which has been subjected to a severe shock, unduly stressed or shows any evidence of wear or damage <u>MUST NOT BE USED AS A LIFE LINE</u>, it should be destroyed or, alternatively, clearly marked that it is not to be used for life lines.
  - (12) Knots must not be left in ropes as permanent damage will result. Do you know that ropes are weakened by knots, turns, hitches, etc. which forms a bend distributing unequal strain on the rope? It has been calculated that a short splice weakens a rope by approximately 10%, a clove hitch or bowline by approximately 40% and an overhand knot by approximately 55%.

LADDERS latitude the inside for wear or dashed to ablant of grining but

Ladders and attachments must be subjected to a close and detailed periodic examination at such intervals as it is necessary or advisable to ensure that defective ladders and/or attachments are not used. Damage or wear may result from external wear, internal friction, corrosion or abuse. EXTERNAL WEAR can be kept to a minimum by shrouding the ladder with P.V.C., hessian or some other material to prevent it from coming in contact with sharp edges of rocks etc. If the number of visible wires, excessively worn, corroded or otherwise defective in the rope exceed 10% of the total number of wires in the rope, it must be discarded. However, it may be possible to reclaim the good sections, this would result in smaller ladder lengths.

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INTERNAL FRICTION AND CORROSION is more important than external wear. The affects are not easy to detect since external wear may shew only slight corresion. To keep abrasion and wear to a minimum, after use the ladders should be cleaned by using a stiff brush and kerosene, compressed air or live steam.

After cleaning, the ladder should be lubricated. Lubricants are available from wire rope manufacturers. A good substitute is a mixture of white spirit and lanoline. Wear and damage may be minimised by -

- (1) Avoiding reverse bends which are detrimental to ladder life.
- (2) Ladders should be kept clear of corresive solutions.
- (3) Suitable packing must be used between ladders and sharp edges of rocks, trees, retc.
- (4) Ends of wire rope must be properly sieved to prevent fraying.
- (5) Never climb, laddors with tricounts or any other nailings as they will cut into the aluminium rungs.
- (6) Ladders subject to severe loads or stresses must be destroyed.
- (7) Frequently check attachments and rung joints.
- (8) Carry ladders, in protective bags while caving to minimise damage and abrasive particules entering the wive rope.
- (9) Ledders should be stored in a well vertilated location.
- NOFE: If there is any doubt whatsoever about the condition of our equipment, please refer it to the Equipment Officer for natification.

REMEMPER - We have an excellent safety record within the club - LET US KEEP IT

#### SUMMARY OF TRIP REFORTS

from November 1967 to November 1968

by Graham Nelson.

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In all, the club has held 20 official trips during the past 12 months. This comparer well with the 12 trips conducted in the previous year. It is interesting to note that, despite the increasing family responsibilities of many of our members, the properties of camping trips compared to one day trips has also increased. Our main interests have however continued to be in the nearer caving areas (Tuglow, Jenolan and Bungonia) with fewer trips to more distant areas. The proportion of trips aimed at searching for new caves, rather than exploring well-known ones has also increased. It has been very gratifying to see how promptly all of the trip reports have been submitted this year. It has been rare for a report to arrive more than two weeks after the trip. This has been of great value in keeping members up-to-date with the club's activities.

The trip report summaries to be given here have been arranged under cave area groupings, rather than in chronological order.

#### TUGLOW AND HOLLANDER'S RIVER

Tuglow was again predominant in our trips this year and despite the extensive explorations of the main cave and surrounding areas in previous years, we were possible to make some new finds.

The first trip to Tuglow this year was led by Stan and was aimed at giving some newer members of the club experience in the main cave. It has become a memorable trip because Stan was unable to find the upper level.

Three weeks later several of us went to Tuglow again. This time the aim was to abseil and climb down the main entrance shaft and to explore any previously unexplored passages in this area. When this was accomplished and several new sections investigated, we set off with digging gear to the very end of the river in the upper level. We intended to dig out the gravel beds which had prevented further progress on previous trips. It was found that the gravel beds had shifted by the stream and approximately 100 feet more cave was accessible including one section with a roof approximately 60 feet high. In another section the passage was blocked by a sump. A natural dam below the sump was removed and after an hour the water level had dropped about 9 inches. This was just sufficient to allow the sump to be passed, but the passage was again filled with water several feet further on and progress ceased.

The next trip to Tuglow was organised in two sections, one to further explore sections of the entrance shaft and the upper level passages and the other to take photographs. Nothing new was found in the entrance shaft, but in the upper level, several hundred feet past the twelve foot waterfall. The roof of the cavern exceeds 100 feet in height and we could clearly hear a land rover above us on the surface. We planned to establish the location and depth of this spot with radio depth measuring equipment, but as yet we have not done so. Further upstream we found a tunnel on the left which had not previously been entered. The floor of

- 20 .

the tunnel showed evidence of a strong flow although it was dry at the time. The tunnel which is about 400 feet long and ends as usual in a series of rock falls, contains some fine crystals and needles and has been surveyed presumably by U.N.S.W.S.S. We proceeded again to the gravel beds at the end of the main passage and found further sections opened by recent rock falls (an earthquake was reported in the area the previous Friday).

The photographic group obtained some impressive pictures in the Window Cave when a brilliant shaft of light shone in through the entrance hole for a short time. While in this cave they managed to scale the left-hand wall of the main chamber to reveal a hole 25 feet up. This was something we had failed to achieve on several previous trips. The high passage was found to go on a short way and then is blocked by soft mud. It was decided to return at a later date to dig in this section as it heads in the general direction of the main cave.

A further cave was located in the western section of the main limestone outcrop. It was explored and found to be somewhat larger than the Plastecine Cave but was mainly notable for the fine example of soft "moon-milk" formation which covered the walls in the lowest section. The "moon-milk" was very well preserved indicating that the cave had possibly only been visited several times before. One passage in this cave leads through a small crack to another entrance.

Several months later Bob led a trip back to the Window Cave to dig in the high tunnel. After three hours work the dig was found too difficult and without much promise and was abandoned. The remainder of the weekend was spent wandering around in the main cave.

The final trip this year to the main Tuglow area was further investigation of the western limestone outcrop and the "moon-milk" cave and to number this T4. The main discovery of the weekend was a small efflux 10 feet above the river near the western edge of the limestone. This will be further investigated to see if excavation or blasting would be worthwhile.

It is quite a while now since Myles Dunphy drew a map of Hellander's River for us indicating the limestone outcrep that he could recall. In August this year, our consciences had bothered us enough about this, so that we planned a trip to investigate the outcrops. Despite our good intentions, the strong wind and heavy snow which fell all day Saturday and the illness of several of our party, finally forced us to turn back at Perishing Point on Hollander's River. A repeat of this trip now has high priority and should be accomplished in the next month.

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#### JENOLAN

Throughout the year we have continued our surface exploration of the extreme southern and eastern sections of the Jenolan limestone. Several previous trips had failed to locate the rumoured Bee's Nest Creek Caves. In May seven of us set off up Camp Creek from Caves House combing the limestone on both sides at first and then on the western side as we went. Several small caves were found in this latter section but the only one of significance was a large crack several feet wide and estimated to be over 60 feet deep. The lack of suitable equipment prevented our entry at the time so we decided to return at a later date to explore it. We located several more small caves further upstream but then, without completing the exploration of Camp Creek, we climbed Oakey Camp Ridge to the east and then headed north down the next small creek towards Harry's River. No limestone at all was encountered in this creek.

The following month found five of us back again, equipped with ropes and ladders to enter the deep hole found previously. The hole opened out into a long crack between two and six feet wide and 95 feet to the rubble pile below. A further 40 feet could be descended through the rock fall. The crack was also explored along its length but it quickly became to narrow. There was very little evidence of previous visitors to the hole except for the steel pipe belay at the entrance and "S.U.S.S." engraved on the wall at the base of the ladder pitch. On the way to the deep hole on this occasion, we had come in from the Kanangra Road and completed the exploration of the upper end of Camp Creek on the way. A large horizontal passage was found about 100 yards up a large tributary of Camp Creek and this was explored for about 100 feet. A low roof and a reluctance to crawl in the small underground river in this cave prevented a complete exploration, although there seemed little prospect of much more. It was, however, determined that we would return in the summer to complete this task.

In September we set out to determine once and for all whether Bee's Nest Creek Caves existed or not. We were at first heartened to find that the creek we had explored before was not in fact Bee's Nest Creek and we set off up the real Bee's Nest Creek with great hope. This soon died as we pressed further

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up the creek and the day slowly passed. Late in the day we set out up one of Bee's Nest Nest Creek's upper tributaries and reached a large white rock outcrop which we had taken to be limestone when we had first seen it from several miles off. It was a very hard white rock but not limestone. It did however afford us some excellent climbing being about 200 feet high and sloped at approximately 70° with very safe foot and hand holds.

That night we climbed to 2000 feet from Harry's River to Black Range and set out for Pheasant's Nest Creek and the eastern outcrop of the Jenolan limestone. We found this limestone without trouble but missed out on our opportunity to explore it completely because we assumed that Pheasant's Nest Creek, which runs parallel to the outcrop, would also intersect it, possibly for a considerable length. This assumption proved to be incorrect and we wasted most of the day finding out. We did however find one small cave on the north bank of Harry's River about 40 feet up the blackberry covered hillside. This cave was well decorated and had two fairly large rooms, the second of which may go on through a passage 20 feet up some flowstone. Dates on the wall of the cave were all before 1906 and it was clear from the blackberries outside the cave that it had not been entered in recent years. Further exploration in this area would be very worthwhile. BUNGONIA

Three trips were held to this area during the year, mainly to enable us to become familiar with the area. It has become clear that a large number of trips will be required before we can become thoroughly acquainted with the caves in the area. However, even a very quick visit to Bungonia reveals many sink holes which could provide fruitfull digging. The limestone area is also large enough so that surface exploration may still yield significant results.

On our first trip we explored the Grill Cave (until turned back by CO<sub>2</sub>) parts of B4, and we descended the series of cracks in the sink hole nearest the "Lookdown" until forced to stop through lock of ropes and ladders.

On the second trip we entered B5 and spent some time exploring the sections between B4 and B5. We noted the way through to the Fossil Extension but decided to leave it for another day. Later in the day we descended the 100 feet to the rubble pile in B7 and explored the small tunnel leading from there. It was interesting to note that the other deep hole, about 30 feet from B7 on the surface, does not appear to connect with it below the ground.

Our third trip again found us in B4. This time we found a water-filled passage with strong traces of  $H_0S$  and as we descended towards B5 we were

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stopped by CO<sub>2</sub>. We then explored a closed passage with a high roof. After a difficult climb up the wall we eventually found ourselves looking across to the top of the ladder pitches in B5.

Later we went again to the small sink hole near the "Lookdown", this time with plenty of gear. We were extremely surprised to find high concentrations of  $CO_2$  just below the entrance. It seems likely that  $CO_2$ concentrations would be at a minimum in winter when the rotting of vegetable matter almost ceases. We should therefore plan to visit the areas in which we encountered  $CO_2$  sometime next winter.

#### WEE JASPER

With the aim of familiarising ourselves with some more distant cave areas we have held three trips to Wee Jasper during the year. Caves which were extensively explored include - the "Dip", "Gong", "Punchbowl", "Signature", "Church" and "Anenome". On our most recenttrip we were pleased to see how well numbers 1 and 2 series of the Dip Cave had been cleaned up. The club concerned (probably C.S.S.) is to be congratulated. The members attending the Wee Jasper trips have been very impressed with the potential of the area and it is possible that in the future we may be able to do some useful work there, despite its remoteness.

#### CLIEFDEN

Again this year we managed to fit in a trip to Cliefden, attracted as usual by the remarkable helictites and other decorations to be found there. We spent some time in CL1 and found several interconnections between the upper and lower levels that we had not seen before. Most of our time was however spent in CL3 in the south-east extension. This was probed rather extensively but still seems likely that further extensions will be found in this area. Other short visits were made to the Trapdoor Cave (CL4) and to the Grand Arch.

#### COLONG

Another trip was held to Colong this year, both to give new members experience in that cave and to increase our general knowledge of it. We had obtained the key , (National Parks and Wildlife Service) but found the gate open. Due to car trouble on the way up there was little time left for more than a quick trip to Woof's Cavern and back. The girls on the trip went very

- 24 -

in in

This is the newest area to receive attention from the club. In September six members set out on a trip to study the topography of the area. A quick search over a large area revealed no significant caves but several sights suitable for excavation were noted. Future trips will concentrate on smaller areas and the most promising "digs" may be attempted.

#### PRACTICE CLIMBS IN GLENBROOK GORGE

Valuable trips were held in Glenbrook Gorge to give members practice in belaying, ladder and free climbing and abseiling. These trips were highly successful and have greatly increased our capabilities in dealing with deep holes and long ladder pitches. A valuable addition to this type of trip in the future, will be the inclusion of some rescue practice.

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BLUE MOUNTAINS SPELEOLOGICAL CLUB JOURNAL

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BEUE MOUNTAINS SPELEOLOGICAL CLUB P.O. BOX 37 GLENBROOK, N.S.W. 2773

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## <u>OOLITE</u>

Official Journal of the Blue Mountain's Speleological Club Post Office Box 37, <u>GLENBROOK. N.S.W. 2773.</u> VOLUME 1, NUMBER 2 JUNE 1969

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Since last going to press, B.M.S.C. has been admitted to A.S.F. membership. We take this opportunity of promising our active support for the Federation. When making criticisms, we will attempt to make them constructive rather than destructive. We offer friendship and co-operation to all serious speleologists.

One advantage (?) of A.S.F. membership is that we find we need a new title for our journal. So "Down Under" in New South Wales has "gone under" and to take its place is casting our pearls of wisdom (?) before fellow speleologists - we present "OOLITE".

<u>A.suggestion re A.S.F. membership policy</u>. More and more people are being introduced to caving through scouting, bushwalking, etc. The trend to more and more unaffiliated groups seems inevitable (For example, some in the Sydney area are - Baptist Caving Group, Cumberland Speleo. Society, Freelance Federation of Speleology, Springwood Bushwalking Club etc.).

The aims of Federation membership policy, to channel new cavers into existing societies if at all possible, is admirable. But is the Federation, and are member societies doing enough to publicise the benefits of organised speleological activity? The present "policy" of imposing membership conditions, meet-them-ifyou-cah, is not a positive approach. As members of this Club will testify, it is more likely to raise the question "Why bother with A.S.F. membership?".

We suggest that on hearing of unaffiliated groups, A.S.F. societies should take the initiative in offering assistance and guidance for a time. During this period some individuals might be willing to join an existing society, but in any case, it could be ensured that members of the unaffiliated group were properly organised, used safe techniques and proper equipment and were educated in conservation. For the occasional group that does remain intact, the supervising society would be in a position to assess its fitness for Federation membership.

It is not claimed that this approach would stop irresponsible caving, but the present "policy" doesnot either. It seems logical that more influence could be exerted on unaffiliated groups by having some contact with them than by ignoring them. Recent Tasmanian accidents, which give speleology a bad image with the man in the street, involved unaffiliated cavers.

The only disadvantage of this scheme seems to be that it means more work for A.S.F. members. Clubs and Societies would have to take their codes and constitutions seriously before they could expect to educate and influence newcomers. Well, this is what B.M.S.C. will attempt to do SINCE our aim is to advance speleology as a science and as a sport. And that, for what it is worth, is our policy statement.

#### ON CONSERVATION

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By Ken Pickering

Action against the vandalism of governments and mining companies being taken by speleologists and other conservationists should be encouraged and supported.

However, speleologists do not seem to be taking enough action in a sphere where their potential influence is much greater - this is in the education and control of -

- (a) their own members, and
- (b) unaffiliated cavers.

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More emphasis needs to be given to the delicacy of the cave environment and the fact that the ecology of caves can be better. It has been shown that even the mere passage of explorers can introduce bacteria not previously present in a cave and endanger bio-speleological research. The need to avoid physical and mechanical damage to caves and formations should need no repetition here.

Writing in the February issue of the National Parks Association Journal, Allen Strom says -

"If you thought you were a conservationist just because you love the native plants and animals, or because you like to bushwalk or because you help the campaign for National Parks, maybe you need to check your credentials. A conservationist is more concerned with managing a set of resources on a sustained yield basis, than with enjoying a fragment of the resources".

This could be translated for speleologists -

"If you thought you were a conservationist just because you love caves or because you love caving or because you support the Colong or Mount Etna or Texas etc. etc. campaigns, maybe you need to check your credentials."

If you want any proof, the March, 1969 issue of "Stop Press" contains a trip report on Wombeyan which says this of the Basin Cave -

"Alas, this once beautiful cave is getting terribly dirty and filthy. If ever an example of desecration and desolation in a cave was required then the Basin would fill the bill admirably. Nearly every vestige of formation has been broken, kicked, dirtied or muddied through the constant abrasion of boots and dirty clothing. The worst thing about it is that possibly a lot of the damage has been carried out by people who are quite conservation conscious......

To go through this cave is to think of other caves and imagine if they too will be as sad in 20, 50 or 100 years time. Perhaps its as well that there are caves that have been found and lost again or have just never been found." Another case in point is the rapidly deteriorating conditions of Tuglow Caves. The effort required to reach this cave is enough to deter deliberate vandals, yet litter in the form of food and paper scraps, drink cans, spent carbide etc. continues to increase and beautiful formations are being muddled and broken (see "Stop Pness" March, 1969 cover illustration).

To prove that it is not always those unaffiliated groups that do all the damage, a member of a Sydney A.S.F. Society has recently inscribed, in carbide soot, his name and Club on the walls of Tuglow. Congratulations you intrepid explorer!

IT IS TIME SCME OF THE ENERGY DIRECTED AGAINST GOVERNMENT VANDALISM WAS TURNED TOWARDS MEMBERS OF THE SPELEOLOGICAL FRATERNITY, BOTH AFFILIATED AND UNAFFILIATED. OTHERWISE, WE WILL SOON BE DOING ALL OF OUR CAVING IN LIFELESS MUDHOLES? DEVOID OF LIFE? BEAUTY AND SCIENTIFIC INTEREST.

#### WHAT IS CAVING

"Caving is the most absolute of sports. He watches the thrills of exploring the unknown and defying physical obstacles with the intellectual challenge to explain how the unfamiliar shapes and beauties of underground scenery have evolved. Most speleologists have started caving for sport and have found fuller and richer experiences because so many scientific questions called out for an answer.

What is the strange instinct, impelling us to explore, which the sight of a cave mouth arouses? Some cavers will admit that the desire to overcome fear of the dark and of the unknown first drove them to become cavers......"

from "British Caving : an introduction to speleology" edited by C.H.D. Cullingford.

TERMITES

According to a trip report of another Society, a small cave discovered at Wombeyan is notable for a termite ridge which winds across the floor (Stop Press, March, 1969).

In January this year, members of B.M.S.C. discovered a similar phenomenon in a remote part of K2, the "Belfry Cave" Timor. The depth of this part of the cave is not known, but it appears to be fairly shallow as roots can be found entering the roof in several parts of "Belfry".

#### NEW MEMBERSHIP AND TRIP LEADER REQUIREMENTS

B.M.S.C. has adopted more exacting standards for members and trip leaders as outlined below. The STANDARDS are not regarded as the ultimate or beyond ammendment as experience might dictate. They are something of a compromise between what is desirable and what can be readily assessed or tested and enforced. All existing full members are currently being re-assessed in the membership requirements as a type of "refresher course". It is not thought necessary at this stage, to require project material.

#### MEMBERSHIP REQUIREMENTS

Persons who have taken part in at least four (4) caving trips under the guidance of an experienced trip leader, comprising a minimum total of not less than forty (40) caving hours, and at least one (1) surface exploratory trip, to the satisfaction of the committee and who have demonstrated their proficiency in the following, shall be eligible for consideration by the committee for full membership of the BLUE MOUNTAINS SPELEOLOGICAL CLUB.

The requirements for full membership shall be :-

- 1. Knowledge of standard caving techniques and principles as cutlined in the booklet, "Potholing and Caving" by Mr. Don Robertson.
- 2. Knew how to ceil, handle, and maintain climbing ropes, both natural and synthetic fibres.
- Knew the fellowing knets: Bewline with Half Hitch, Fisherman's, Tarbuck, Overhand, Ancher, Reef, Deuble Sheet Bend and Fireman's Chair.
- 4. Belaying:- Understand the principles of belaying, and lifelining, know how to select a belay and belay himself securely, and work a lifeline.
- 5. Each prospective member should experience at least one (1) safety fall, in which he is belayed by an experienced speleologist.
- 6. Each prospective member should experience a belay with a falling weight.
- 7. Know how to roll, care and maintain metal ladders.
- 8. Demonstrate their ability to select and belay a ladder to a safe anchorage.
- 9. Descentrate correct ladder climbing techniques and ability to descend and ascend a ladder pitch of not less than thirty (30) feet, while belayed by an experienced speleologist.
- 10. Knewledge of first aid treatment of fractures, bruises, cuts and abrasions, concussion and shock.
- 11. Be fully conversant with the Safety Code, Conservation Code and Code of Ethics of the club.
- 12. Undertake to abide by the Constitution, By-Laws and Policies of the club.

#### TRIP LEADER REQUIREMENTS

A trip leader shall be a person who has fulfilled the following requirements to the satisfaction of the committee:-

- 1. He shall be a financial member of the club.
- 2. He shall be fully conversant with the Safety Code, Conservation Code and the Code of Ethics of the club.
- 3. He shall have a thorough knowledge of the Trip Leader First Ald requirements.
- 4. He shall be proficient in map reading and compass usage.
- 5. Experience in caves and parts thereof not open to tourists comprising a minimum total of not less than one hundred (100) caving hours.
- 6. He must show to the satisfaction of the committee he has the necessary attributes of a competent leader, namely -
  - (a) Sense of responsibility;
  - (b) Temperament;
  - (c) Discipline;
  - (d) Organising ability;
  - (e) Tact; and
  - (f) Vorsatility,

to ensure the safety of the party, cave preservation, and the well being of the Blue Mountains Speleological Club.

7. He must be in possession of emergency rescue contacts for the caving areas concerned.

#### TRIP LEADER FIRST AID REQUIREMENTS

- 1. Know how to deal, diagnose and demonstrate the treatment for all fractures to limbs.
- 2. Understand the importance of immobilisation of fractures and importance of not moving suspected fractures.
- Demenstrate the treatment for shock and concussion.
  Explain the circulation of the blood, and know the
- Explain the circulation of the blood, and know the position of the main arteries and veins.
- Demonstrate the treatment for internal bloeding.
  Demonstrate the treatment for external bloeding
- 6. Demonstrate the treatment for external bleeding from artories and veins, and be able to distinguish between these two (2) types of bleeding.
- 7. Knew how to treat minor cuts, abrasiens, scratches, bloeding from the nese, snake and spider bites, burns and scalds.
- 8. Knew two (2) methods of artificial respiration recommended by the Royal Life Saving Society or the St. John's Ambulance Association.

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#### RECENT DISCOVERIES IN THE RIO CAMUY CAVES OF PUERTO RICO

#### By the B.M.S.C. Roving Reporter in Puerto Rico - Graham Nelson

Puerto Rico is the southernmost of the Greater Antilles in the Caribbean Sea. It measures barely 35 x 105 miles but within that area is one of the most highly developed Karst areas in the world. Limestone occurs throughout the island but the main Karst area is about 40 x 20 miles in the northwest corner. This area is riddled with sink holes and haystack hills. An average sink hole is 400 ft. across and 160 ft. deep and the total number exceeds 100,000. In one of the largest of these sink holes has been built the world's largest radio-radar telescope. This particular sink hole measures over 1300 ft. across and is 300 ft. deep.

Despite its rugged nature, the Karst area is quite densely populated and it is possible to spend many days searching for caves without leaving your car. In fact, no point in the whole area is more than 2 miles from a sealed road. Under these rather ideal conditions, and with 2 1/2 million people within easy reach of the area, you would expect speleology to be a favorite pastime. However, when I arrived here there were only three speologists active in the They all live in the capital, San Juan, which is some 50 miles area. from the Karst area. I am the only one living in the actual Karst This apathy towards the caves is not without cause. Only area. six months ago an experienced speleologist was drowned in a flash flood in the Ric Camuy caves. In this case the river rose 10 feet in the cave in about 10 minutes and there was no rainfall on the surface. Presumably an underground dam gave way, releasing a huge torrent of water. Several such dams of logs are known to exist in the explored sections of the cave. In addition to the danger of flash flocding in the caves is the danger of several severe diseases which are associated with the caves and with the cave water. About 80% of the people living in the mountains of Puerto Rico are stricken with the parasite Schistosomiosis. This parasite enters the blood stream through the skin and causes severe damage to liver, intestines There is no very effective cure for Schistosomiosis and bowel. although the World Health Organization claims almost 100% cure with a new drug which is not yet generally available. The parasite is usually present in huge numbers in all of the rivers of Puerto Rico. However, running streams and dark cave rivers are relatively free of the parasite. Rabies is an ever present danger in caves harbouring bats and the virus can be picked up from the air if very large numbers of bats are present. Because of Rabies, gloves become a very important part of caving equipment. Another disease, Histoplasmosis (according to Moore and Nicholas, the symptoms and effects are similar to those of tuberculosis) has only recently been discovered in the Puerto Rican caves. 80% of a group of speleologists from the U.S. were found to have this fungus disease of the lung after only one visit to the caves. In its severe form, the disease is fatal after 6 to 12 months. Fortunately, however, the Histoplasmosis fungus found in caves usually leads to a benign form of the disease which

shows up in x-rays of the lung but which produces no other symptoms.

After becoming familiar with all the dangers of the caves here one has to decide whether or not one still wants to be a speleologist However, large numbers of unexplored caves present themselves to you as you drive through the mountains offering a challenge which is hard to ignore. Consequently, I made contact with the three Puerto Ricans who are members of the National Speleological Society and made arrangements to visit the world famous Ric Camuy caves with the. They had not been caving at all since the other member of their group was drowned. However, since then their old enthusiasm has returned and together we have made several important discoveries at Rio Camuy.

The Rio Camuy is a small river something like the Jenolan river Initially it flows north towards the coast through open in size. sugar cane and dairy country until rising in front of it is the 1200 ft. high limestone plateau. At first the river has managed to cut a valley into the limestone but then suddenly it gives up and plunges underground in a series of rapids about 10 miles from the coast. No one has ever entered the caves at this point because the high speed of the water would make the return journey almost impossible, particularly after the rain which falls almost every afternoon in In addition, the water at this point is no dcubt teaming summer. with Schistosomiosis parasites. Fortunately, however, the underground river can be entered at at least four other places. My first trip to the area was to see these four entrances and to get some idea of the problems involved in the exploration of the caves.

The first point at which the cave can be entered is about a mile from where the river goes underground. The entrance is a very small hole called Ventosa on the side of a grassy hillside behind a small county Colmado (Pub). Inside is a small room from which a short ladder pitch and a squeeze brings you suddenly to nothing. 240 ft. below is the Rio Camuy. The cave has been entered several times via this 240 ft. free hanging pitch. The usual technique for such a pitch is to abseil down and to use ascenders to climb out. U.S. speleolo~ gists use this technique on short pitches where we would use ladders. It is slower than a ladder climb but allows the climber to rest comfortably when he wishes. The underground river has been explored for about 1200 ft. upstream from Ventosa. This leaves at least one mile of cave unexplored in that direction. Downstream from Ventosa one eventually comes to a point where light can be seen above. This is the entrance from the bottom of Espiral sink. This entrance requires about 30 ft. of ladder plus 100 ft. of easy free climbing. A further 1200 ft. downstream the river plunges out into daylight in the bettem of a huge sink hole (Tres Pueblos). This sink is about 150 ft. deep and 500 ft. across and has sheer walls on all sides.

From the surfact Tres Puebles can be entered by climbing down a very narrow track and a short ladder pitch. It was in this sink hole that Hector, one of the local speleologists, was drowned. He was in the cave when the flash flood came. Being well out of the water he was quite safe but being near the entrance he decided to swim out. He was swept with the water, through the sink hole and
into the gaping hole on the far side. From this point the underground river goes about half a mile before plunging over a 100 ft. high waterfall and emerging again at the bottom of Empalme, a sink hole only 50 ft. across, but 400 ft. deep with overhung walls. This sink hole is entered through another cave about 100 ft. wide, 100 ft. high and 600 ft. long. From this sink hole it is less than half a mile to where the Ric Camuy is again shown on the map and to where the resurgence was assumed to be. However nobody has been more than 400 ft. past Empalme underground because of the danger of not being able to get out against the flow of the river. In addition, a rise of only 2 ft. in the river level is required to cut off the entrance in the Empalme sink.

After seeing all the known entrances to the Rio Camuy caves it became clear that the next most important point to be located was the resurgence. Several previous expeditions from the U.S. had failed to locate it so I set out on the 15th March, with Norman Veve from N.S.S., with little confidence of success. We were very fortunate however in that when we reached the Rio Camuy on the surfact Proviously when others had looked for the resurgence it was dry. the outside stream had been flowing so they had searched upstream for the resurgence. Norman was sure that the river in the cave was never dry sc the resurgence had to be further downstream than had been suspected. We then set cut down the narrow canyon of the surface Ric Camuy until we were blocked by waterfalls. Below the dry waterfalls were stagnant poels no doubt tearing with Schistesemiosis parasites. We were reluctant to leave the canyon in case we missed the resurgence. However, eventually we decided to climb the walls of the canyon and proceed through the jungle along the edges. As luck would have it the next pcint at which we could reach the stream was right in front of the resurgence. The underground Ric Camuy was pouring cut of a large hole on the western side of the stream. This discovery means that the Ric Camuy is underground for about twice the distance previously believed. It also means that only about 1/3 of the Ric Camuy caves have been explored.

Having found the resurgence we quickly put on our caving gear, including life jackets, and pushed cur way into the cave against the flow of the river. 50 ft. inside we found a dry passage to the right and followed it into a big room from which there were two ways down to the river again. The room was about 50 ft. x 50 ft. x 100 ft. and we named it the Russel Gurney Room after the man who first discovered the Ric Camuy caves. From the big rccm we went back outside for a rest and then struggled against the underground river for about 400 ft. until we were stopped by a rockfall. The water gushed cut through the fallen rock. Norman helped me over the rockfall but declined to come further himself. I realized later that he expected Hector's body to be found behind the rocks. A further 100 ft. and progress was again stopped by a rockfall but this time there was no way on. Water gushed out of every gap in the fallen This was a disappointment but we folt great satisfaction in rock. having located the long sought for resurgence. On the way back to cur car we noticed two deep sink holes with sheer walls roughly in line with the underground river. We determined to return soon to

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see if either of them connected to the underground river above the rockfalls.

On the 12th April I led a group to explore the two sink holes seen on cur previcus trip. The sink nearest the resurgence had no cave entrance but it did have two large depressions about 100 ft. apart. I folt sure that these depressions would prove to be directly over the two rockfalls in the cave so I was very hopeful of finding a way into the river from the second sink hole. Access to this sink hele proved difficult but eventually we made it and found that the two small streams which flow into it do in fact go into a lcw cave filled with stagnant water. We declined to enter the water and searched until we found another small entrance higher up in the sink. After climbing down 30 ft. and a further 30 ft. ladder pitch we came into a small room through a hole in the roof. The walls of the room came down into water on all sides and it seemed that further progress was impossible. I named the cave the "Funnell Cave" after an odd formation in the final room. In cne corner was a mud funnel about 6 ft. in diameter, with sides sloping downwards at abcut 45°. The funnel was filled with water which bubbled upwards from a small hcle in the bottom and flowed over the lip of the funnel into the main body of water in the room. Т estimated that the water was at about the level of the stagnant pool in the bottom of the sink.

Was the water we had just swum in simply at the level of the water table in the area, cr was it really the elusive Rio Camuy dammed up behind the rockfall we had seen on the previous trip? These were the questions we asked curselves as we hacked cur way up the jungle covered wall of the sink hole. I remembered that Norman had said that the day Hecter was drowned he had seen great logs and tyres floating through the Tres Pueblos sink nole. These must all be dammed up behind the rockfall. . Because we had had over 3 inches of rain the night before we decided to make a quick trip to the resurgence to see if the river flow had increased much since our previous trip. When we reached the cutside river we found it, no dry this time but a roaring torrent, yet sure enough when we reached the resurgence the flow from it was only about 20% more than when we had first seen it. This seemed to confirm our idea that the lower section of the Ric Camuy was dammed up and maybe the cave is ccmpletely filled with water for several miles. We also wondered about the volume of water in the surfact stream. Maybe there is a second resurgence further upstream which only flows when the underground water dams up high encugh. On this same day Norman had been leading another group down to the Ric Camuy caves through the Espiral sink. He later confirmed that the flow there was perhaps dcuble its normal value.

It is clear that the Ric Camuy caves still have much more to reveal. Exploration in the caves must stop now for the rest of the summer because it rains heavily each afternoon during this period. However, we have several more sink holes to investigate and several caves to explore that the local farmers have told us about. One of these caves, known locally as the "Swallow Cave" is about 50 ft. in diameter and over 150 ft. deep. We attempted to reach the bottom of it on one occasion but our combined total of 120 ft. of ladder was insufficient. From the lowest point we reached, it wasn't possible to see whether the cave went on or not. In any case, it is almost directly above where the Ric Camuy should be and we plan to enter it again shortly.

If all else fails there are two points that we know lead into the two unexplored parts of the cave. Both of these involve travelling downstream in the underground river with the possibility of not being able to return. From where the river goes underground to the farthest point reached upstream from Ventosa, is over 1 mile on the surface and from Empalme sink down to the resurgence is about 3 miles on the surface. If we have a long dry season next winter we may find the conditions right to enter one or both of those places and, who knows, maybe there are other huge rooms like the famous "Big Room" and the "National Geographic Hall" yet to be found. And maybe in the near future when the proposed \$1 M tourist development of the caves is completed, people will wonder how it was that some section of the caves became known as the Blue Mountains Extension of the Ric Camuy caves.

#### CONSIDER YOUR VERDICT?

IN THE MOUNTAINS BLUE YCU WILL FIND A CREW OF MOTLEY FELLOWS INDEED THEY GO BY THE NAME OF B.M.S.C. AND SPELECLOGY IS THEIR CREED SOME CALL THEM "CAVERS" OR SIMPLY "POTHOLERS" "MUG SPELEOS" IS HEARD NOW AND THEN BUT WHATEVER THE NAME IT'S STILL THE SAME GAME FOR THESE FEARLESS AND FOOLHARDY MEN OF CRAWLING AND CLIMBING QUITE FREQUENTLY SLIDING AND CLOTHES ALL COZING WITH MUD AND IF YOU SHOULD SPY ON ONE OF THESE DAYS A BOD UNRECOGNISABLE, WITH WORDS INCOMPREHENSIBLE YOU WILL KNOW WITHOUT ASKING THAT HE IS A MAN FROM THE BLUE MOUNTAINS SPELEOLOGICAL CLUB.

Roger Peters

### BOOKS IN BRIEF

### Recent additions to B.M.S.C. Literature

"Caves and Caving" by Marc Jasinski - published by Paul Hamlyn -London - 1967, illustrated, 160 pages, \$0-85 from Angus and Robertson.

Covers a lot of ground at a general level and would be a good introduction to all branches of speleology for a prospective member. Illustrations are numerous and in colour.

Chapter headings cover personal and group equipment, techniques of exploration, photography, surveying etc. The chapter on Bicspeleology is interesting and discusses microflora as well as cave dwelling fauna.

The worst part of the bock! - "The caves of Australia are still not fully known and the work of the few speleological societic will no doubt gradually reveal a wealth of underground formations". Is this the image we have overseas?

"The Life of the Cave" by Mchr and Poulson - published by McGraw Hill - New York - 1966, 100 colcur, 50 monochrome illustrations, 232 pages, \$4-95 from Angus and Robertson.

C.E. Mohr has been a president of the National Speleological Society, U.S.A. and various naturalists organisations. Thomas L. Poulson is an Assistant Professor of Biology at Yale University.

A very readible book and no less valuable because it deals only with cave life from North America. Explains how cave life has developed unusual physical and behaviourable attributes, like the vibration receptors that compensate for the lack of vision in cave fish or the economy in movement when food gathering, of various species.

One chapter discusses the cave food pyramid, the regulation of cave population, numbers and the timing of reproduction cycles to coincide with food availability. Describes a comprehensive 3 year cave population study by Brother Nicholas in the Cathedral Cave, Kentucky. This cave was marked off into 12 sections and each insect etc. found in a section was marked with a distinguishing colour to denate the particular section. Observations were made on 1,100 days regarding position of the marked species, any new species present and feeding habits etc.

The colcur photographs are very well produced and many are at high magnification. There is a short section on fossils, an appendix, glossary and a useful bibliography.

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### CAVE FAUNA COLLECTION - TUGLOW CAVES

### By Ian S. Bogg

A cave fauna collection trip was held on the 15th March, 1969 to Tuglow Main (T1).

The statification and zonation segregation of **•b**served and collected cave fauna is represented by the table below:-

# A

	THRESHOLD : ZONE	TWILIGHT ZONE	DARK ZONE
CEILING		Bats	Bats
WALLS	Spiders <sup>4</sup> Flies	Spiders Crickets Flies	Spiders Crickets Mosquitoe Flies
FLOORS	r To	Springtails Snails Worms Slater Flies Spiders	Spiders Flies Millipedes Frogs Maggot ?

The specimens collected (some unpigmented) from the Twilight Zone were located at the bottom of the large entrance shaft approximately 50 feet deep, with an opening of about 12 x 3 feet to the surfact. The floor of "terra rossa" was overlain with a thick accumulation of bat guano. The specimens were not found in the guano but in the moist environment of the cave earth surrounding the guano.

The abundance of cave life could possibly be to three (3) factors:-

- 1. Climate,
- 2. Cave food supply,
- 3. Minimal disturbance and interference.
- <u>CLIMATE</u>: The air movement was very slight. The relative humidity was 100% as indicated by droplets of water that had condensed on the cave walls.
- CAVE FOOD SUPPLY : There was a good supply of moss, funge, humus, organic material and fresh bat guano present. All important contributors to the reservoir of the available food supply.

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MINIMAL DISTURBANCE AND INTERFERENCE : In this particular section of the cave there was very little evidence of disturbative and interference to the cave life and environment by speleologists as compared with other sections of the cav

> It is interesting to note that in this section of the cave where eave rocks and walls were exposed to natural light, a growth of velvety green moss occurred, which, when viewed under terchlight, appeared to be semi luminous, lime green in colour.

The Dark Zone specimens were located at river level approximately 250 feet down from the entrance in a chamber above the river The floor consists mainly of rimstone pools in varying stages of development, some of which contain some very good examples of "pisolites and oclites". The only apparent food supply in this chamber was organic material. On the floor were numerous exoskeletons and the odd fly trapped in the silvery latice spiders' webs. Around the walls were many brown, pear shaped, egg sacs, suspended from the ceiling and wall projections by a single thread of variable length.

All specimens collected are awaiting positive identification.

Finally, with the need for continued studies in the natural history of the subterranean environment and the life cycles of cave fauna, every precaution must be taken to ensure that cave life is not harmed or destroyed. <u>HOWEVER</u> if visitors to these caves or for that matter any other caves, continue to leave indiscrimenately, carbide, faeces, food, papers, etc. behind, the cave environment could be destroyed completely. The cave life will not be around for future generations to examine and our descendants will not be able to refute or uphold current theories and predictions about cave life and discussions about the future of cave adaptions will be little more than idle speculation.

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"NOTHING IS RICH BUT THE INEXHAUSTIBLE WEALTH OF NATURE. SHE SHOWS US ONLY SURFACES, BUT SHE IS MILLION FATHOMS DEEP. EMERSON."

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#### NEW MEMBERS

B.M.S.C. welcomes into the Club -

Lionell Baker Lynn Bogg John Ingleton Ken Keck Barry McWilliams Allan Phillis Rodney Shone Ailsa Thomas Colleen Ward -coOco-

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### A.S.F. LIBRARY

For those mombers interested, the A.S.F. maintain a library of speleo material. There are no limitations re borrowing from the library, except that the member borrowing is a responsible, accredited member of a club or society known to the A.S.F. The club must assume responsibility for any loan made to a member for replacement of library material if lost or damaged.

It is preferable that the full title and reference to a paper is provided when requesting a loan. The A.S.F. librarian maintains an index and can assist with some research, but obviously some fairly firm guide lines would be appreciated by him.

Any people unknown to the librarian must have a reference or such like from the President or Secretary of the club.

by Ian Bogg.

#### GROWTH RATES OF STALACTITES

On 24th May, 1969 a party of B.M.S.C. members found an old mineshaft in the Black Range - Jenolan area which contained a full range of small calcite formations.

The shaft is located almost at creek level and cver 1,000 feet below the top of a mountain. It is horizontal, approximately 120 feet long and 7 x 4 feet in cross section. Enquiries at the Mines' Department indicate that the shaft was sunk in 1898 to mine a deposit of "Bornite", a peacock coloured, copper-iron ore.

The formation is at the end of the shaft where there is indication of water seepage. Apparently, ground water dissolves limestone higher up the mountain. The flowstone is about 1/8" to 3/16" thick while there are both shawls and straw stalactites that vary from 3/4" to 7/8" long. What appear to be small calcite crystals were also found in the joints of the rock in the walls and roof of the shaft.

The maximum age of the shaft and hence the formation is approximately 70 years. As the longest stalactite is 7/8" this gives a minimum rate of growth of 1/80" per year in this location. This compares with a rate of 1/200" per year quoted by Dunlop for a stalactite in Arch Caves, Jenolan. Overseas' rates of growth, quoted by Moore and Nicholas, vary from 1/7" per year to 1/146"per year for stalactites and 1/4" to 1/83" for stalagmites.

by Ken Pickering.

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#### PRESS CLIPPINGS

# Sydney Morning Herald - 12th April, 1969

"WHAT'S TO BE DONE ABOUT LAKE GEORGE?"

The question always arises : Why does the water disappear so quickly once it starts to go? Old hands in this region are convinced that a crevice or fissure forms at some stage and lets the water cut. Gale in his bock "Canberra and its Legends" pointed out that it was possible to hear the sound of rushing water from the Mcunt Fairy limestone caves, only a short distance from the Lake. "This water can come only from the lake and nowhere else" he said.

The generally accepted theory, however, is that the water disappearance is caused by evaporation and as the lake gets lower and lower the scakage caused by the tidal effect as the water goes over the dry grounds in the east and then the west (depending on the prevailing winds) helps to a marked degree in the lowering of the water level.

(The Federal Bureau of Mineral Resources confirmed on 31st January that the lake's level depends on a "balance between rainfall on the lake, run-off into the lake and evaporation from the lake").

### Sydney Morning Herald - 31st March, 1969

"JUDGE HITS AT VANDALS IN THE GUISE OF PROGRESS"

Sir John Barry, a Justice of the Supreme Court of Victoria since 1947 and Senior Puisne Judge since 1966, was addressing a graduation ceremony at the University of Molbourne after receiving a Doctor of Laws degree said:

"Some commercial activities that claim to be praiseworthy examples of economic progress are, from the standpoint of the general welfare, essentially vandalistic.

No readily accessible river or stream has gone unpolluted. Our natural essets, plant and beast, have been ruthlessly exploited or destroyed, or are threatened with exploitation or extinction.

Unfortunately, what is everybody's affair is nobody's business.

There are few signs that this heedless rapacity will be halted or checked by a well-conceived and genuinely enforceable scheme of Government control.

The nightmare thought recurs that Australia may become a vast, disused quarry surrounded by a malodorous and lethal cil slick."

### Sydney Morning Herald - 14th February, 1969

"ARCHAEOLOGY TEAM TO SEEK ABORIGINAL LINK"

An Australian archaeology expedition will set out in July for the Colebes.

Its mission will be a pilot survey of the limestone caves lying in a 100 mile arc around the southern scaport capital of Makasar.

The hoped-for result of this preliminary dig - the first Australia has undertaken in Indonesia - is the shedding of new light on the engmatic origins of Australian Aborigines.

Leader of the expedition will be Mr. John Mulvaney, 43, a senior fellow in Prehistory at the Australian National University, Canberra. Accompanying him on the two-month trip will be two research students at the University, Mr Jan Glover and Mr.Campbell Macknight.

The last major excavations of the cave sites were made by the Dutch in the 1930's. The stone implements they recovered proved very similar to those ones used by Australian Aborigines.

However, lacking modern techniques, the Dutch Archaeologists were unable to place their finds accurately in a specific age. By using the radio carbon dating method, Mr. Mulvaney hopes to accomplish this "crucial" factor from charcoal samples.

"The samples will be painstakingly gathered and seeled in plastic sacks for return to Australia for scientific examination."

"We also hope to find human shelecone or bones and indications as to whether the primitives were hunter: or agriculturists", said Mr. Mulvaney.

In tracing back the migration routes of our Australian Aborigines, and the ancient Melansbiane, he supports the theory that they drifted south in the prohistoric times through South China, Taiwan, the Phillippines, Borres, the Celebes and New Guinea via its costal fringes before crossing to Australia.

This assumption is based on the lack of migratory evidence from researches in the West Malaysia, Jumatra, Java and Portuguese Timor.

### FORMATION OF LAVA CAVES

#### by Ken Pickering

B.M.S.C. members will be familiar with the various theories of cave formation in limestone. They might not be so familiar, however, with the formation of Lava caves. According to "Moore" and "Nicholas" these caves can be up to a mile long and ironically, some newadays even contain ice due to "cold traps".

In "Landform Studies from Australia and New Zealand" edited by Jennings and Mabbutt, C.D. Ollier gives an outline of the formation of Lava caves with special reference to the caves of the newer volcanic province of Victoria. Lava caves occur in other parts of Australia. A member of the club has found coral-like encrustations on the walls of a Lava tube in Lamington National Park, Queensland.

Ollier says that when Lava flows, the surface in contact with the air, cocls more quickly than inside and therefore solidifies faster and most geologists agree that caverns are formed in basalts by the draining cut of liquid below the solidified surface of the caves and surrounding flows. The idea of Sheats and James (1937) that the caves formed as great hollow lava blisters, which were burried under later flows, is no longer acceptable.

"Caves" range in size from small tubes, a decimeter or so across, which are/were tributaries of the main caves, up to very large caves. The main chamber at Skipton Cave (Mt. Widderin) is 60 m long, has maximum width of 20 m and is 8 m high. Church Cave, Byaduck, contains a chamber roughly 50 m long and 8 m high. Mt. Hamilton Caves have no great chambers but a total longth of passages of 900 m.

In flow, the caves are usually conspicuously elongated in the direction of lava flow, they may be straight tubes or branching and may have swellings and constrictions. Some show bulbous endings to the tunnels, either at the upstream or at the downstream end. The tunnels usually slope gently down away from the magma source, but cocasionally the slope is in the opposite direction, as at the entrance to the Turk Cave, Byaduk.

In cross-section there is usually a well defined floor which may be quite flat, above which the cave roof is typically arched. No arcular cross sections have been found. Two caves have asymetrical cross sections and structures, indicating plastic deformation of original cutlines.

The flaws evolving tunnels are divided into layers varying from about a metre to about a decimetre in thickness and parallel to the surface, by definate partings. The layers do not represent successive flaws, nor the darting joints, but are due to shearing during laminar flow just before solidification. This has been called layered lava by Ollier and Brown 1965. Concealing these layers in many instances is a linking or skin of basalt plastered onto a roof and walls which display flow marks and wrinkles and lava stalactites.

When layered lava (distinct from massive lava) is formed, the more congealed lava goes into the layers and the more liquid lava (accompanied by many volatiles) is concentrated between the laminae. At this point something very unusual happens. The liquid lava becomes further segregated and comes to occupy cylindrical tubes running through the layered lava. The tubes are completely full of liquid which exerts a hydro-static pressure, so the tunnels can change level at times and the liquid can flow upward for short stretches. The mobile liquid lava eventually becomes concentrated into a few major cylindrical lava streames which are a continuing source of heat and the hot liquid contents may even ercde and melt some of the earlier layered lava. Solidification and re-melting, flow and hydro-static pressure are all working together. The result is a cylinder of liquid lava flowing through tubes cut in virtually sclid layered lava.

The lava may solidify in this form, but after, due to a breach in the tee of the flow and for cessation of supply from the volcanic sources, the liquid lava will escape from the confining tubes.

If the rccf cf the tube is strong enough a tunnel cr cave will be preserved. Alternatively, the rccf may sag down as lava is withdrawn.

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### MISHAP

### By Stan Thomas

During a recent trip to Wee Jasper the Dip Cave was visited as an assignment of photographing a jaw bone, such assignment being allotted to us.

The members being -

Paul	Bennett	<b>,</b> .	Lione	эl	Baker,	
Bill	Devine	(Snr.)	Stan	Τł	nomas,	
Bill	Devine	(Jnr.)	Dave	&	Colleen	Ward.

Dave, being our trusty leader, we entered the Dip and made a swift trip through the system to where the remains were situated. The equipment was set up and soon three of us had taken all the shots required to complete our object of the trip.

With our job finished, we decided to familiarise our group with the rest of the system, with the "Dismal Chamber" being the first. Up until this point, the trip had been quite uneventful. Shortly we encountered a very interesting traverse which Dave (our Long Legged member) shot across without any difficulty.

My turn then arrived, so with arms and legs out-stretched, I started to make my way. During this climb and being fully spreadeagle, a "crash", "rumble", then a large "thud" was heard from behind where the rest of the party had been waiting. "What had happened?" "Had someone fallen?" This had to wait until completing my climb.

A stalactite had fallen striking Colleen on the head and grazing her shoulder, then tumbled to the floor below. Fortunately, the helmet she wore saved her from a severe injury, her first words were "Gee I was just going to take off my hat and have a scratch".

As a matter of interest the stalactite in length was about 18 inches and approximately 5 inches across.

This article was written for the interest of fellow Speleos, also as a thought for all NON WEARERS.

#### CAVE SAFETY

The following brief outline covers, in order of importance, the reasons for accidents and how the mishaps could have been prevented:-

### 1. FALLING

### A. When?

- 1. in attempting a jump,
- 2. in ascending or descending,
- 3. while chimneying a pit,
- 4. while negotiating a difficult ledge or rocky incline.

### B. Why?

- 1. fatigue,
- 2. faulty equipment,
- 3. no safety rope.
- C. How it could have been prevented.
  - 1. rest before and after a difficult climb,
  - 2. careful inspection of equipment,
  - 3. use of safety ropes at all times,
  - 4. never jump, even a short distance.

#### 11. FALLING OBJECTS

- A. When?
  - 1. during ascent or descent,
  - 2. while lowering gear.

#### B. Why?

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- 1. uncleared rubble and rocks at top of shaft,
- 2. loose rocks on walls of shaft,
- 3. loose gear carried on person,
- 4. heavy equipment being lowered or raised on faulty ropes,
- 5. heavy equipment left close to ledge.

C. How it could have been prevented.

- 1. clear rubble from top before descending,
- 2. lead man clearing loose rocks from walls on descent,
- 3. prohibit locse gear on all members of the team; insist
- all gear be tied to person or carried securely in pockets,4. test ropes and pullies before lowering or raising heavy gear,
- 5. keep heavy equipment and personnel away from edge of shafts,
- - V. never try to clear loose rocks from below.

### 111. WATER AND DROWNING

- A. When?
  - 1. flooding of chambers or passageways,
  - 2. overturned boat.
  - 3. forcing of siphon,
  - 4. accidental fall into water,
  - 5. sudden drop into deep water while wading in shallow pool.

### B. Why?

- 1. lack of caution,
- 2. inability to swim.
- C. How it could have been prevented.
  - 1. weather check,
  - 2. drainage and runoff check,
  - 3. use of safety rope when wading,
  - 4. nonswimmers stay out of boats,
  - 5. never siphon without a team, full equipment, safety rope and well-rehearsed signal system,
  - 6. . constant watch on water level.

#### IV. LOST

- A. When?
  - 1. Caving alone,
  - 2. separated from team.

### B. Why?

- 1. going on exploration alone,
- 2. leaving rest of team without pre-arranged time and place of meeting.
- C. How it could have been prevented.
  - 1. never cave alone,
  - arrange meetingtime and place whenever separated from group,
  - 3. mark turns and forks with removable marker,
  - 4. always carry three independent sources of light.

### V. BAD AIR

A. When?

- 1. in deep sections of cave,
- 2. in guano rooms,
- 3. in crowded galleries where carbide lamps and too many people used up short supply of oxygen.

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- 23 -

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B. Why?

- 1. failure to pay attention to symptoms of shortness of breath, fatigue, dizziness, headache, drowsiness or blurred vision.
- C. How it could have been prevented.

- 1. use of candle test (if a candle will not stay lit, the air is bad),
- 2. leave cave immediately at first signs of shortness of breath, fatigue or dizziness.

VI. POISONOUS SNAKE BITES

A. Where?

1. both in and around the cave.

- B. Why?
  - 1. failure to wear high-top boots,

. . . . .

- 2. failure to look for and beware of snakes in rocky regions known to shelter them.
- C. How they could have been prevented.
  - 1. the use of high-top boots and long trousers in and around cave.
  - caution around walls and rocks in areas known to house snakes,

. .

- 3. use of extra light in areas snakes could be hiding,
- 4. knowledge of emergency treatment for snake bite and first-aid kit with antivenom.

#### SUMMARY OF TRIP REPORTS

### December 1968 to May 1969

In this six months' period a total of fourteen trips were hel comprising three surface exploration trips and eleven caving trips. One of the caving trips was only a half day affair; the balance of the time being spent on the A.S.F. "clean-up" at Bungonia. Seven different areas were visited and a total of 640 caving man hours and 18 surface man days were logged. Six trips were weekend trips and eight were long day trips.

#### TUGLOW

### 28th December, 1968 - $3 \times 7\frac{1}{2}$ man hours

Purpose of this trip was general familiarisation of some prospective members with the cave. All sections of the main caves extending to 200 yards upstream of the second waterfall were traversed.

### 26th January, 1969 - 4 x 10 man hours

The river was very disccloured from run off from newly cleared land upstream on this occasion. Inside the main cave, in an area in the river cavern, a lot of insect life was found - several types of spiders, guanc flies and larvae etc. One type of spider had festooned the walls with webs to which it had attached its egg sacs. A live frog and a frog skeleton were also found in the af "1 a section of the cave. Another interesting find was a fairly large animal skull, complete with upper teeth, which was embedded in the flowstone.

### 25th - 26th January, 1969 - 5 x 16 man hours

This party did general exploration in the far reaches of the upper level and found some extensions of the cave containing good crystal formations which have not yet been ruined like the rest of the cave (the Trip Report seems to indicate that there was some fraternisation with the female members of another party, but its a bit vague on specific details!).

### 27th January, 1969 - $3 \times 7$ man hours

This party was engaged on general exploration only.

### 15th March, 1969 - 3 x 7 man hours

The object of this trip was to collect insect specimens and to photograph the skull previously found embedded in the flowstone. The main collecting area was on a ledge near a thick deposit of guano. Some of the specimens were completely unpigmented, though located relatively close to the entrance shaft. More collecting was done down at river level in an area where some cave pearls were seen. In all, some 20 specimens were collected and handed to the Australian Museum in Sydney for identification.

#### TIMOR

# 11th - 12th January, 1969 - 7 x 11 man hours

This was a joint trip with M.S.S. and Newcastle Tech. and its purpose was mainly general familiarisation for B.M.S.C. Caves visited were : Helictite, Hill, Belfry and Shaft and the desecration of formations in these caves needs no further comments from us. Quite a few insects were noted in Belfry, including some termite tunnels and some wallaby bones were found in Shaft Caves.

### 22nd - 23rd February, 1969 - 9 x 10 man hours

This second trip was made to collect more marsupial bones and to map and photograph the location of the bone deposit. Photographs of an unusual type of formation, which for want of a botter title was called the "Phallic formation" were also taken. Measurements of temperature and P.H. were taken. All specimens were later handed to the Museum.

### WHE JASPER

# 28th - 29th December, 1968 - 6 x 92 min hours

The aim of this trip was to familiarise some now members and prospectives with the area. In No. 5 series of the Dip a thorough examination of the fossils was made. The Signature and Punchbowl . caves were also visited and the prospectives, both of them girls, handled the ladder pitch into the Funchbowl like weterans.

### 15th - 16th March; 1969 - - 7 x 83 man hours

This second trip was mainly photographic and a record of various fossils was obtained for identification purposes.

### EUNCONTA

# 8th February, 1969 - 7 x 83 man hours

The morning was spent in assisting in the A.S.F. "clean-up". Fortunately, we had taken our own sacks, so the slight hitch in arrangements didn't prevent us doing our stint. In the afternoon we were able to get in a few hours caving, mainly in B4-5.

### MALLI

## 25th - 27th April, 1969 - 9 x 18 man hours

This was the Club's first trip to Walli and so the purpose was mainly familiarisation. Friday afternoon was spent in the Piano Cave which had been turned into a photographic studio by an earlier group. Several interesting mammalian teeth were collected. Good anagonite crystal was seen in the Big Hale which was entered on Saturday. On Sunday we had a visit from Joe Jennings complete with a flat tyred ANU 'rover. The rest of the day was spent poking round the surface and entering several small caves such as Bone Cave. (P.S. We found out, the hard way, that the A.S.F. Handbock's 60' pitch into the Piano Extension is closer to 90'! Fortunately there was a convenient ledge where the first man down could wait while the ladder was lengthened.)

### HOLLANDER'S RIVER

29th March, 1969 - 3 man days 10th May, 1969 - 10 man days

A special map of the Tuglow region was drawn by Myles Dunfhy in December 1966 to indicate all the known limestone areas. Some interesting finds have been made, but despite an abortive trip in 1968, no exploration of the Hollander's River part of the area was done until March of this year. During the first trip intermittent rain fell all day; still, this was better than the howling snowstorm encountered in 1968.

Limestone outcrops along the river for about one mile above and below the junction with Budthingeroo Creek. In places bluffs of limestone up to 40' high occur and some of these have been undercut by the streams to the extent of six to eight feet.

An area of large sinkholes has been found and there are two creeks which go underground as soon as they encounter the limestone in the valley floor. In all, six caves have been found which vary in cross section from approximately two feet square to 12' x 8'. So far all caves have been blocked by earth or river gravel after about 30' - 40' in length. A little decoration exists. Further results would depend on some hand digging.

#### BLACK RANGE

### 24th May, 1969 - 5 man days

This trip was to investigate a limestone area shown on an old map we acquired. A few now-limestone shelter caves were found in the cliffs of Black Range, but the trip was interesting nevertheless.

This was because of the discovery of an old mine shaft approximately 120' long which contained calcite decoration - flowstonstraw stalactites, shawls and rimstone pools. The age of this mine shaft will shed some interesting light on the growth rate of formations.

#### HOW TO RUIN AN ORGANISATION

#### المتحريفية المستقد بالإلى من من المركز ا المركز المركز

Appearing in a recent issue of the Springwood Apex News was an article titled "How to ruin an Organisation".

It may contain a lesson for some members of the Speleological Clubs or Societies.

- 1. Don't attend meetings.
- 2. If you do attend come late.
- 3. When you do attend, sit at the back, and talk to the bloke next to you about the weather or the football.
- 4. Never accept office. It's much easier to criticise than to do something.
- 5. If asked by the Chairman for your opinion on something, just tell him you have nothing whatsoever to say - and then after the meeting, tell everyone how things should have been done.
- 6. Hold back your subscriptions as long as you possibly can, so as to give the Secretary a bit of unnecessary work.
- 7. Start a whispering campaign about the finances.

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- 8. Never subscribe to your journal. This bucks up the Editor and enables him to make constant improvements.
- 9. Don't bother about getting new members let someone else do it, after all, there's plenty of others who have time for that sort of thing.
- 10. In short, do nothing more than absolutely necessary but, when other members roll up their sleeves and do the lot, howl like mad about how the organisation is being run by a clique.

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# Official Journal of the Blue Mountain's Speleological Club

# Post Office Box 37,

### GLENBROOK. N.S.W. 2773.

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DECEMBER 1969

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### FROM THE PRESIDENT

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This is the third journal produced by B.M.S.G. and as it appears approximately one year after joining the A.S.F., it seems appropriate to take stock of the year's activities.

There has been a steady improvement in all aspects of the Club's activities. Membership numbers have risen from 24 to 33 and standards of membership have been raised. Trips have increased both in number and in duration. Equipment has been replaced and improved, notably by the construction of one 50 ft ladder and the purchase of 360 ft of nylon rope.

Many members, whilst still engaging 'sporting' caving, have developed a wider, scientific, interest and a useful liason with the Australian Museum has been established. Other members have undertaken the St. John's First Aid Certificate course.

Perhaps the best index of a year's solid activities is the fact that B.M.S.C. does not have one outstanding trip report. Overseas, Graham Nelson, is maintaining and expanding the Club's reputation by explorations in Rio Camuy and Puerto Rico.

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All members can take pride in belonging to B.M.S.C. Lets keep it this way by continuing to put the Club first and our individual interests second.

The start with the start of the

Ken Pickering, PRESIDENT.

# CAVING

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A non-competitive sport covering all aspect of the exploration of caves, known as 'spelunking' in the United States and as 'potholing' in the United Kingdom ('speleology' often used synonymously with 'caving', is the scientific study of caves). Cavers who value their safety join a club, sharing the high cost of equipment, including ropes, ladders, collapsible boats, radio direction finders, climbing and diving equipment. First Club in Australia : Formed in 1948. Clubs affiliate with

the Australian Speleological Federation, formed in 1956, which promotes safety and conservation.

Australia's Biggest, Longest, Deepest Caves : Jenolan (N.S.W.) contains the best-known caves in Australia, and has spectacular formations equal to the best in the world. Augusta Jewel Cave (W.A.) contains the longest straw stalactite in the world - over 20 ft. long and no thinner than a soda straw. Largest caves in Australia are under the Nullabor Plain, an expanse of limestone larger than Victoria. Abrakurrie Cave has one room 1100 ft. long, 150 ft. wide and 50 to 100 ft. high. Cocklebiddy Cave has a lake over 700 ft. long. Mullamullang Cave, with over six miles of passage, is the longest cave in Australia. Western Victoria has unusual caves formed by the withdrawal of liquid lava from ancient volcanic rock. Tasmania has the deepest cave, Growling Swallet, 527 ft. deep. Deepest cave in the world is the 3,723 ft. deep Gouffre Berger near Grenoble, France. Dr. Ken Pearce's descent of this cave in 1963 is the world's deepest record. Record Period Underground : Cavers do not break records for the sake of it, but in 1966 a party of 14 cavers each spent seven days underground exploring and surveying remote parts of a cave in the Nullabor Plain. Duration Caving is called 'Trogging'. Longer solo stays underground have been made in Australia and Overseas, but this is really not caving as a sport. Geoffrey Workman, 34, set the world trogging record at Southern Cross Cavern, near Pately Bridge, Yorkshire, in 1963 by remaining underground for 105 days.

Longest Solo Period Underground : The longest Australian solo underground endurance effort was achieved by Dorothy Williams, 35, in 1963 when she stayed below in a cave at Yallingup, W.A. for 90 days.

C

<u>The Hooligan Menace</u>: Vandals are a problem in some of the W.A.'s best known caves. In 1969, the Wave Rock Tourist Development Company was formed to protect caves near Wave Rock, Hyden (a country town). This is just one example of cave lovers' efforts to safeguard outstanding tourist attractions. The Augusta Jewel Cave (opened in 1959) has attracted more than 150,000 visitors. Only 30 per cent of the cave is open to the public. Caves 16 miles north of Madura on the Nullabor Plains are said to be the biggest single entrance caverns in the world and will have wide tourist appeal when developed.

"Extract from 'Ampol's Australian Sporting Records' by Jack Pollard Special Advisor - Caving : John Dunkley".

### 110 DAYS IN CAVE

BELGRADE - a 35 year old Yugoslav, Milutin Veljkovic, today broke the world record of 110 days in a cave. Veljkovic, with a sheep, a dog, a cat and a duck to keep him company, entered the Semar Cave near the east Serbian village of Kopajkosar on June 24.

He plans to stay underground 463 days, collecting data on his and the animals' physical condition.

Veljkovic, a citizen of Belgrade, is sponsored by a Belgrade evening newspaper.

"Reported in the Daily Mirror, Sydney - Monday, October 13, 1969".

#### INTERESTING POINTS ON BATS

By Barry McWilliams.

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### Solving the Mysteries of Bat Flight

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Bats possess the most highly developed sonar system. In absolute darkness, they can fly without a blunder through twisting cave corridors or through the darkest forest. They can make quick U-turns when necessary to avoid obstacles, even wires, in their path.

No other night flier can locate flying insects with as much success. They fly blind and rely on echoes, ranging in on each tiny mosquito or gnat with deadly accuracy. The details of the bat's sonar system were discovered only recently.

But as early as 1793, Italian Scientist, Lazzaro Spallanzani, suspected that bats guided themselves by hearing. He proved that bats which had been blinded could go around obstacles and track down flying insects. But even those with sight were nearly helpless in the laboratory once their ears were plugged. They bumped into walls and flew head on into wires stretched across the rooms.

A perplexing question remained! How could the bat while sending out a steady barrage of sound, hear the echoes well enough to guide itself by them? The oscilloscope pattern shows that each sound a bat makes is a separate, incredibly short note, lasting less than one thousandth of a second. The bat hears and evaluates each returning echo in the brief interval between two outgoing notes.

### How Good is Bat Echolocation?

Bats pay attention to their echolocation only intermittently. When they are flying down familiar cave passages, they have no need for fresh information and so they evidently disregard the echoes. Explorers crawling through narrow cave passages are sometimes almost engulfed by bats. Sometimes, when an obstruction is suddenly placed along the route the bats customarily follow, a few in the front of the group collide with the unexpected object but the signals they emit upon collision, alert the bats behind them. Apparently, they all tune in their sonar again and find a detour around the obstruction. A bat's efficient sonar system makes it a difficult animal to trap. Biologists who wish to study the migrations of bats often install fine mets in the cave entrance in hopes of being able to catch and band them. These nets succeed in tangling a few early comers but their cries quickly alarm those behind and they promptly whirl around and escape. If there is a hole in the net, the alerted bats find it and immediately pass through at full speed.

### How Bats Catch Insects

K

The efficiency with which bats detect and capture their insect prey was never suspected until recently. For years scientists had watched the characteristic diving, veering flight of bats but it was not until 1953 that anything was known about how effective these manoeuvers are.

A scientist once examined the stomach contents of several bats. Nearly every bat he disected had succeeded in filling its stomach in one or two hours. He found that it took the equivalent of 66 moths or 500 gnats to fill a bat's stomach. On the average, these bats pursued eight insects a minute and caught about six of them - an amazing batting average.

Bats have a general pattern of operating their sonar system. As a bat cruised about at random seeking its prey, it emitted about 25 supersonic calls a second. When it detected an echo and swerved in pursuit, it stepped up the rate of calls. In the last tenth of a second, which it closed in for the kill, it was sending out 200 to 300 calls per second. One particular bat which weighs half an ounce, consumes nearly half its weight in insects in a single night - thus the guano that accumulates beneath their roost in the course of a summer may provide hundreds of tons of fccd for myriads of cave dwellers.

The food the bats eat and the fat they accumulate before they become dormant must last them through hibernation. In their deep

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hibernation, their breathing and heartbeat nearly stop and their body temperature sinks to the temperature level of the air around them or the rock to which they cling. Scientists do not yet understand the marvellous mechanism by which a bat is roused when the temperature drops close to freezing. Once a hibernating bat is disturbed by fluctuating temperatures, by the presence of cave explorers or by the pressure of urine accumulating in its bladder, rousing begins and cannot be halted. The bats heartbeat increases a hundredfold and it shivers violently. As a result its metabolism quickly increases and temperature rises by about 2<sup>0</sup> per minute. Complete arousal of a dormant bat takes about ten to fifteen minutes, in contrast to one to two hours it takes to achieve complete hibernation. Most bats cannot fly till their body temperature reaches 85<sup>0</sup>.

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"Reference : The Life of the Cave - Mohr & Poulson"

Editor's Note : Further 'Interesting Points on Bats' can be found in the article by David Pye entitled "The Diversity of Bats" in Science Journal for April, 1969, pages 47 to 52. A copy of this Journal is held by the Librarian:

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### LA GRUTA TROGLODITAS DE PUERTO RICO

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Readers will be interested to know about the group with which Graham Nelson is caving in Puerto Rico. It is called La Gruta Trogloditas de Puerto Rico and meetings are conducted in Spanish. It is the first grotto located outside mainland U.S.A. to be admitted to the N.S.S. and was chartered on 4th August, 1969.

Some members have been caving since 1957 but not until a N.S.S. trip to Rio Camuy in 1968 did any individuals become members of N.S.S.

One of the group's ablest members was drowned in a flash flood on 23rd June, 1968 in the Camuy River and this event affected them so much that for a time they ceased caving altogether.

Into this situation came our first President, Graham Nelson, at the beginning of 1969. One suspects that his influence did much to revive the group and even to prompt the formation of the grotto. Graham himself had become a N.S.S. member in February, 1969.

At present the Puerto Rico grotto comprises 7 members plus 3 probationary members. Their activity, as recounted in the reports published in this Journal, mainly comprise exploration in the Rio Camuy area.

### RECENT DISCOVERIES IN THE RIO CAMUY CAVES

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### OF PUERTO RICO

by the B.M.S.C. Roving Reporter in Puerto Rico - Graham Nelson

## PART 2

Second trip to La Cueva del Humo (Snake Cave). This cave I am sure will provide some of the greatest discoveries since the discovery of the main sections of Rio Camuy in 1959. Incidently, the name is probably due to the huge columns of mist which would form when great volumes of warm cave air blow out at night in the winter. I may also make some measurements at La Cueva del Humo to try to estimate the volume of the cave. We visited this cave on 7th and 28th June and have new explored over 3000! of almost straight cave passage. The greatest height of passage has been somewhat over 100' and the greatest width 200'. The first 1600' of cave to the underground river was mapped by Russel Gurnee (discoverer of Rio Camuy) in 1958 (before he found Rio Camuy). He apparently did not associate the two because all of the Rio Camuy caves are north of the point where the surface river goes underground but La Cueva del Humo is 3000' south, however, the 3000' of passage we have explored goes due north. We are therefore at a point somewhere near the Blue Hole. In addition, the river in Cueva del Humo contains huge logs and the Blue Hole is the only place that such logs could go underground. Thus it seems that we have shown that the underground Rio Camuy is at least a mile longer than our last estimate after locating the resurgence.

After reaching the underground river, there are several ways on -

 Downstream the river enters a sump but a small tributary enters from the left. The roof above this tributary is about 100' high and goes for as far as you can see but you sink to your waist in mud if you try to follow up it. My B.M.S.C. "small hole" training however taught me to look for small passages which might bypass the mud. I found a high level passage which came out about 60' above the tributary and past the mud. We will descend this pitch and explore further scon.

Upstream we travelled by rubber raft on our second trip and 2. again came to a spihon after about 500'. Our only hope of following the main river now is to find a way to the river again past one or other of the siphons. My B.M.S.C. "rockfall" training seems to have led to a solution to this problem. I saw a rockfall near the wall of the cave at the downstream sump. The others, use to large caves, refuse to have anything to do with me when I want to explore such small holes. However, in this case, I stumbled on the greatest find I guess I will ever make. I found huge passages often ending in deep pits. The passages seemed to go on and on and I quickly walked about 1000' by myself and then hurried · back to tell the others. Their lack of enthusiasm was so frustrating and the best I could do was to persuade them to come back in three weeks. Well last Saturday was the day but even when we got into this huge new section, they weren't very excited. In 13 hours they were ready to turn back. At this point we had followed the main passage past several 100' deep pits and finally after about 2000' we had come to a pit we couldn't cross. The wind down the 40' high passage was still very strong indicating perhaps miles of cave ahead. We had enough ladder with us to descend the pits and look for low level passages perhaps leading to a climable pit further on, however, we had to turn back "in case the river floods". However, we had brought food with us in case of a forced overnight stay for that reason. On the way back I went down another side passage which ended in a 100' pit below which was the river again, downstream from the sump.

As you can see we have much to explore and very much more yet to find. Names for all these caves must be thought of and maps

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will have to be made to see how this cave fits in with Rio Camuy system. If and when we link La Cueva del Humo with Rio Camuy, we will have one of the great caves of the world (in volume at least if not in total length) to our credit. The sad part is that I now must wait for the others to decide to come back again because they have the ladders we need to enter the deep pits.

Meanwhile, I am going to explore another cave which I found a long time ago. I explored about 500' by myself but now I have two staff members of the University of Puerto Rico in Arecilo interested in caving. Next Sunday (6th July), we plan to visit this new cave. The cave is entered through a rockpile about 100' long on the side of a small road. Suddenly you emerge from the rockpile to find a cave entrance in front of you. The entrance is a mud dam that holds back stagnant water about waist deep. After passing through 200! of this water you can walk above the water. Then in front of you is a deep pool of clear water. Ahead the roof comes to within 2' of the water and beyond a huge room opens up and you can hear the sound of a water fall. Being alone you decide not to enter the 10' deep water but notice that on your left is flowstone with clear water trickling down. Above the flowstone a small passage leads to a beautifully decorated room filled with water. Apparently this is the end but no, if you study the formations carefully, you find a ten inch gap between two stalactites and there is six inches of clearance between water and roof. If you take off your helmet and life jacket you can just get through without drowning. In the next room you hurry quickly because if it rains, you are sure your small air space will fill up and you will be trapped. Ahead you find another deep pool and a stream entering from the left. With no life jacket fear and wisdom tell you to turn back, but oh, for a few bods' from B.M.S.C. to help you explore all of this! Anyway next week some mysteries of this cave will be revealed. More names and maps! Incidentally, I found on a contour map of the area that a small stream goes underground some three miles from my cave. It later re-appears and finally disappears one mile from the cave and heading in the right direction. Who knows ?

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### RECENT DISCOVERIES IN THE RIO CAMUY CAVES

### OF PUERTO RICO

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by the B.M.S.C. Roving Reporter in Puerto Rico - Graham Nelson

# <u>F + T 3</u>

Rio Camuy and La Cueva del Humo pose further puzzles. On 18th August, Normal and I returned to La Cueva del Humo to try to pass the pit which stopped us before. I climbed into the pit but there were no lower passages and I couldn't climb up the far side. I then tried to traverse along the top edge of the pit with a running belay (quite an experience) but the slope became too steep. I am going to try again soon with a pair of crampons belonging to a guy at work (crampons in Puerto Rico!!).

We then went back to a pit below which we had heard the river before. The first 20' is on a steep mud slope and then you are in a huge room 150' high and 70' to the river, below the 70' is a free hanging pitch and the mud slope above it ends at a muddy knife edge. I'm afraid I chickened out but next time if there are three of us I will go down. It is a whole new system ahead.

On our way into Humo we found the river level down 4' and with no flow. The water was still too deep to walk but the downstream sump was open by about 10 inches. I swam through amid an incredible mass of bamboo logs and managed to climb out into a room 20' x 20' x 80' high and jam packed with logs 20' long. The river flowed out through another low passage but I couldn't reach it because of the slimy logs. However, I'm sure our 70' ladder pitch is downstream on the same river. The most peculiar thing about all this is that the surface Rio Camuy, not 2000' away, was flowing underground at its usual rate. It is very hard to imagine where the logs, coconuts etc., which float down the river in Humo, come from if not down the Blue Hole. The article by Watson Munroe indicates that only three major rivers flow underground in the Karst area, Camuy, Tanama and one which flows in the cave I described to you last time. This is in agreement with my studies of the contour maps of the Karst region.

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I have now completely explored the cave mentioned in my last letter. The locals call this cave "Boca del Infierno" (mouth of bell). I had hoped it would link with the river which I mentioned goes underground several miles away. However, I never got much farther than in my earlier trip. You may remember there were three ways on. One led quickly down to one of the others. Yet another soon grew too small to follow and had a small stream flowing from it. The main passage was filled with water too deep to stand and ended in an apparent sump. However, at one place through a small air gap you could see into another room and hear a waterfall. I ducked under into this room and found a stream cascading into one corner of the room and down below, it disappeared into a small hole. Both ways on were filled with water. The pool I had come from was dammed by rocks but water from it also trickled into the stream. While all this was happening a fantastic thunder storm was going on above. We were over 1000! from the entrance but cculd hear the mountain rumbling. When we emerged we found about 30 locals standing in the rain waiting to see our bodies float out. They said that water from the cave floods the road after heavy rain. The interesting thing is that it would not be possible for anything like that volume of water to flow in the cave we were in. I mentioned before that the entrance is a huge rock pile and that the actual entrance we went in is 100' above the road and cut of the rockpile but water was gushing out of the rocks. It therefore seems certain that there are large lower-level passages hidden by the rockpile. Т plan to try and find them this weekend (30th/31st August).

One other cave I have explored completely is called Los Chorros (the spurt). It has a very spectacular entrance on a cliff 30' above a main road. A huge torrent of water spurts out of the entrance. Once inside, it is very pretty and as straight as a railway tunnel. With very little diversion you walk upstream
in ankle to knee-deep water for 4000'. It then ends in a deep pool. About 1000' from the entrance the stream splits in two. Half the water flows to the entrance. The rest flows down another passage and ends in a sump. All these pools and sumps are very discouraging. There must be miles of tunnel beyond. Also this week-end I am going caving by plane. The guy I 'conned' into exploring Los Chorros with me owns a plane and we are going to search for caves from the air. I should get some interesting pictures.

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# 14th September, 1969

Well this letter has been a long time in the writing. I disgraced myself on the air trip by getting air sick, but we saw one cave about 500' up a cliff face and about 50' from the top. Water cascaded out of the entrance and down the cliff. After we landed we went to find a way up the cliff to reach the cave. We got up OK but were too far away from the cave to reach it in the time we had available. We then tried to reach it by car from on top. We only succeeded in finding another cave on a farm where we stopped to ask directions (we haven't entered that one yet). One night after work we drove again to the top of the cliff above the cave with the 500' waterfall. We located the cave but hadn't come equipped to climb down. Instead we explored sink holes in the area looking for an entrance to the cave from that direction but without success.

I have also been on two other trips since I started this letter. One into the main sections of Rio Camuy - up till then I had only visited the 4 entrances. We went in at Tres Pueblos sink and planned to reach the Big Room. We passed through the National Geographic Hall with its 100' high flowstones and cascades of rimstone pools, through a 400' swim to the bottom of Espiral sink. The light diffuses down 200' from the entrance above and is very impressive. We left one guy there because he was exhausted and cold and Greg and I (the guy who owns the plane) set off upstream to the Big Room. We agreed to be back in 2 hours so after  $1\frac{1}{2}$  hours of easy going we had reached a sump and had climbed a difficult chimney to see the river roaring

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about 80' below. We didn't see how we would ever pass that spot. However, some wandering through a rockpile brought us to the river above the rapids we had seen. We couldn't decide if we had reached the Big Room or not. If the roof is 100' or 250' up, you can't see it so it all looks pretty big. On the way back we saw a little stream coming in from the East and wondered if it could be the East Tributary which comes in just above the Big Room. The trip back took  $\frac{1}{2}$  hour compared with  $1\frac{1}{2}$  upstream. We had a great time floating down the rapids in our life jackets. Later, when we looked at the map, we worked out that we had reached a point below Ventosa and we had passed through the Big Room without seeing it. It is actually 50' above the river and to one side of it.

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The other trip was with Judy and the boys to La Cueva del Indio (the cave of the Indians) which is a "commercial" cave on the ocean. It is not very big but is notable for the carvings made by the Indians on the walls.

NEW MEMBERS

B.M.S.C. welcomes into the Club -Allan Gill Barry Richards Ken Hynes Norman Westerman Phil O'Connell

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# STUDY SUGGESTS CAVE CRAYFISH HAVE FUNCTIONAL "CLOCK"

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A study of blind cave crayfish by two American biologists suggests that they have a functional "clock" that ticks even when there is no need to know the time, New Scientist reports -

But why such an undoubtedly elaborate mechanism persists is still a mystery.

A deep, light-tight cave must be one of the most stable biological environments known to man New Scientist says. In fact, the very absence of fluctuations, daily or seasonal, means that it is an ideal testing ground for studying an organism's intrinsic rhythms, where there are no external stimuli to act as triggers. Man himself under these conditions shows a periodicity of activity which approximates to a 24-hour rhythm, although it varies slightly between individuals. Since Man's normal environment follows a 24-hour cycle, such a rhythm is well suited to his normal existence. But what about the animals that permanently inhabit caves? A built-in rhythm with activity at set periods can have little significance in such a static environment; indeed, because food is short, continual activity and foraging behaviour may have an advantage. Some cave-dwelling species have been generally isolated for thousands of generations; do they lose their intrinsic rhythmicity? 

Until recently it seemed that although annual cycles associated primarily with breeding could sometimes be detected in cave crustacea and fish, daily or circadian rhythms were absent. But now Dr. T. C. Jegla and Dr. T. L. Poulson of Yale Department of Biology have put forward experimental evidence for the persistence of circadian rhythms of activity and oxygen consumption in species of blind cave crayfish (Orconectes pellucidus) which has been separated from surface populations for between 25,000 and one million generations.

Five out of seven crayfish tested under cave conditions of temperature and continuous darkness showed activity and oxygen consumption rhythms. Three of these were statistically significant as judged by auto-correlation and gave periods averaging 26, 27 and 34 hours. When these three crayfish were exposed to light-dark cycles with a 24-hour period, they showed even clearer rhythmicity and one of them was able to synchronise its activity with the light-dark cycle.

"Extract from Australian Fisheries - July, 1969"

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# FIRST AID

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Another six members of B.M.S.C. have recently undertaken and completed the St. John's Ambulance First Aid course. This now makes a total of eight members who have completed the course.

## CONGRATULATIONS -

John Fitzgerald Ken Pickering Roger Peters Stan Thomas Colleen Ward Dave Ward

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## ELEMENTARY MAP READING

By Ian S. Bogg.

It is of importance that members of B.M.S.C. be able to read a map and through practise, acquire a retentive memory for country. This importance is accentuated with the amount of surface exploration being carried out at the present time.

#### INTRODUCTION

A map is a representation on paper of a certain area of country. Fundamentally, a map is nothing more than a picture from which one can visualise the subject which it portrays.

The map is a diagram showing the details and landscape features. But, it is important to realise the limitations of a map. Firstly, a map can never be completely accurate, for there must always be features such as roads, buildings etc., which have appeared since the map was produced. Secondly, a map cannot possibly show everything which occurs on the ground, because, there is not room to do so. What can be shown and what must be left out is governed primarily by the scale, but generally speaking, detail must be sacrificed to clarity and to the avoidance of overcrowding.

Every map carries a variety of information printed on its margins and, since this information usually appears in approximately the same position, it is useful to know where to look. FIG. 1 shows the typical marginal data to be found on the I:50,000 Royal Australian Survey Corps military map.

#### CONVENTIAL SIGNS

A convential sign is the name given to the symbol used to indicate on the map all important features of the landscape; e.g., roads, railways, rivers, buildings, forests, tracks, waterholes, etc. It is not possible to give an actual picture of each one, however, conventional signs are drawn to look as far as possible like the features which they represent.

#### SCALES

Maps obviously cannot represent the landscape in life size and it is therefore necessary to scale every distance down proportionately. The extent to which the size is reduced constitutes the scale of the map. The essence of a map is that it is a drawing to scale, and it bears a definate ratio to the size of the actual landscape which it portrays.

There are two (2) methods of expressing a scale :-

- In words e.g., 1 inch to 1 mile. This means that 1 inch on the map represents 1 mile on the landscape.
- 2. As a representative fraction (R.F.).
  - This is the scale expressed as a ratio or fraction between distances on the map and actual distances on the ground (e.g., 1:63,360 means that 1 inch on the map represents 63,360 inches on the ground and as this is the number of inches in one mile, this is the R.F. for a scale of 1 inch to 1 mile).

The scale may be shown as a scale bar - a straight line or bar divided into suitable units of distance.

#### RELIEF : CONTOURS

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The word relief is used to describe the rise and fall of the ground; i.e., hills and valleys. It is one of the most difficult things to show due to the fact that the map is a flat surface. Various methods are adopted to show relief on the map and the most important of these is known as Contour Lines.

<u>Contour Lines</u> : These are the most accurate means of height indication on a map. Contour Lines are thin (usually brown) lines drawn on a map with each line connecting up points of equal height above sea level. The sea level is the zero contour and Contour Lines are shown at equal intervals of height, (Known as the Vertical Interval or V.I.). The V.I. is shown in the marginal data. On a 1:50,000 map a 50 ft. V.I. is used.

The distance measured flat on the map between adjacent Contour

Lines is known as the Horizontal Equivalent (H.E.). From close observation of Contour Lines it is possible to determine whether the slope is steep or gradual; i.e., the closer together the Contour Lines are the steeper the slope and conversly - the further apart the Contour Lines are the gentlier the slope, see FIG. 2. <u>Gradient</u> : A cradient is a slope expressed as a fraction. If we say that a slope has a Gradient of 1 in 4, we mean that for every 4 feet of horizontal distance, the slope rises or falls 1 foot vertically.

The simple formula below enables a Gradient to be calculated from a map -

	V.1.	=	Gradient
	Second scholarshifts		
	H.E.	<u>.</u>	
where	V.I.	=	Vertical Interval
	н.Е.	=	Horizontal Equivalent

<u>Spot Levels</u> : These do not show the slope of the landscape but simply give the height above sea level at a given point. They are often shown on the tops of hills or along roads etc. <u>Hachures</u> : These are short, black tadpole-shaped lines drawn down the slope of hills with the thick end of the line being in the direction of the higher ground. They are drawn heavier and close together where the slope is steepest and more thinly and wide apart where the slope is gradual. They show relief in a picturesque manner, conveying a good general idea of the landscape but give no indication of actual heights unless supplementary spot heights are indicated.

Layer System or Tints : Heights above sea level can be shown by various shades of colouring to which a key is given in the marginal data. This method is one which gives a good impression of the landscape relief, however, it is only approximately accurate and it provides general rather than detailed information.

# GRID SYSTEM

If you look at an Ordinance Survey Map, probably the first thing that strikes you is the fact that it is covered with a



network of parallel lines forming a Grid running south/north and west/east, the result being a series of small squares. They are spaced at 1,000 metre intervals on the 1:50,000 series maps. The object of the Grid is to make it easy to describe the exact position of a point on a map. In the border of the map at each end of the Grid line is a number to facilitate point identification. The position of a point is indicated by a six-figure map reference number. The first three digits identify its position from west to east, and the second three digits locate it from south to north. See FIG. 3.

As the numbers of the lines go from 00 to 99, it will become apparent that on adjoining maps, the numbers will be repeated. Because of this, the name of the map (and its R.F.) <u>must always</u> be included in the map reference; e.g., 'Glen Davis' 1:50,000, M.R. 280062.

## MAGNETIC DECLINATION

This is often known as the 'magnetic variation'. It is the angle between the true north line and the direction pointed by the compass at a particular point on the earth's surface.

A bearing measured by a compass is always a compass or magnetic bearing. To convert it to a true bearing, add the magnetic declination if it is easterly, or subtract it if it is westerly.

#### COMPASS DIRECTIONS

Compass Directions are specified in two ways : -

- By the name of the compass point nearest the direction required.
- 2. By a bearing.

A bearing is the graduated method, in degrees, of indicating the direction of one place from another, normally measured in a clockwise direction.

A 'back bearing' is the direction exactly the opposite to a bearing and is found by the addition or subtraction of  $180^{\circ}$  depending whether the bearing is greater than or less than  $180^{\circ}$ .

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## SETTING A MAP

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By setting or orienting a map is meant turning the map around so that the north or top of the map is pointing towards actual north, thereby the features shown on the map are shown relative to the ground position.

There are two (2) methods of setting a map : -

1. By compass.

2. Visually.

<u>To Set a Map by Compass</u>: Place the compass directly over the magnetic north arrow on the map then carefully turn the map until the compass needle corresponds to the magnetic north arrow. <u>To Set a Map by Visual Comparison</u>: Visually align the landscape features with the corresponding features shown on the map.

#### DEFINITIONS

The following list of technical terms and topographical forms is by no means conclusive, and is meant to include only those which are more commonly encountered :-

1. Technical Terms

Bearing - A graduated method of indicating the direction of one place from another.

Contour - A line drawn on a map to represent an imaginary line on the ground along which every point is at the same height above sea level.

Conventional signs - Symbols used to portray features of the landscape on the map.

Gradient - The slope of a hill expressed as a fraction. Grid lines - Lines running parallel to, and at right angles to, a north and south line through approximately the centre of the area covered by the grid system.

Grid reference - A numerical method of indicating the position of any particular area or point on a map.

Horizontal equivalent - The distance measured on the map between adjacent contour lines. Magnetic declination - The difference between True and Magnetic North.

Representative fraction - This is the scale expressed as a fraction.

Scale - The relationship between a distance on the ground and the corresponding distance on the map.

Vertical interval - The rise in level between successive contour lines.

2. Topographical Forms

Col - A dip or gap in a ridge, usually the lowest point on a ridge between two peaks.

Gully - A cleft in rocks, or on a steep hillside, down

which water runs.

Knoll - A small isolated hill.

Re-enterant - A narrow valley, closed at one end, separating two spurs.

Saddle - Is used when the col is on a broad rounded ridge. Scree - A slope of boulders and stones on a hillside.

Scree-shoot - A line of finer stones running down a scree slope.

Spur - A piece of high ground jutting out from a range of hills into lower ground.

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A March 1986

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# FIFES FOLLY

A resume of recent newspaper items on the Colong scandal -Telegraph 30.8.69

"There has been a running fight between the Government and the Conservationists for six months now over whether the people who want to mine our national parks should be given the development rights over areas such as Colong".

### Telegraph 5.9.69

"The N.S.W. Government would examine a decision by the State branch of the Liberal party against limestone mining leases in the Colong Caves' area, the Minister for Mines (Mr. Fife) said yesterday. However, the decision is not binding on the Parliamentary branch of the Party".

## Telegraph 18.9.69

"The Commonwealth Portland Cement Company was discussing the mining of alternative sites cutside the Kanangra Boyd National Park".

## Sydney Morning Herald 30.9.69

"Two rockclimbers made a dangerous descent on ropes 30 storeys down the facade of the State Office Building at lunchtime yesterday and officially opened a conservationist backed campaign of harrassment against the State Government."

### Telegraph 2.10.69

"4,000 acres surrounding the Colong Caves Reserve will be added to the proposed Kanangra Boyd National Park. But an extra 580 acres has been set aside for mining purposes. Actual quarry operations would be conducted on only 185 acres of the 580 acres."

### Telegraph 12.10.69

"Take the State's best scenery, crush it, pipe it 39 miles, turn it into cement.

Take a 15 mile drive through foreign pines - no birds, no kangaroos, no wild life at all - reach the most magnificant view

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Take these things and what you have got will be Kanangra Boyd National Park".

## Telegraph 21.10.69

"Some of Sydney's leading doctors yesterday joined the protest against limestone mining in the Colong Caves' area.

Mr. Justice J. C. Mcore, president of the National Trust, said that mining, industrial and urban development boom in New South Wales posed a hideous threat to the natural amenity of the environment".

# Sydney Morning Herald 23.10.69

"Negotiations would be held for the cancellation of the Colong Caves' mining lease if limestone surveys at other sites proved satisfactory the Minister for Mines, Mr. Fife, said yesterday.

Commonwealth Portland Cement was considering the possibility of a joint operation with the Southern Portland Cement Company to construct a pipeline from Marulan which would serve both companies. Deposits at Murruin Creek were being examined by the N.S.W. Geological Survey. If either of these sites proves a satisfactory economic alternative to Mr. Armour (Colong) I give an undertaking that I shall negotiate with the Company to have the lease at Mr. Armour cancelled in exchange."

### Telegraph 5.11.69

"Letters from Milo Dunphy, Secretary of National Parks Association.

At the Boyd Plateau 65 miles south-west of Sydney there are over 100,000 acres of existing public reserves, dedicated from 1890 onwards.

Despite generous provisions of six state forests in the area extensive logging operations are now being carried out in these areas.

On October 18, Sir Edmund Hillary was shocked to see timbergetters working. - Owner of a pine plantation in New Zealand himself. Sir Edmund was strongly critical of the proposal to clear the native forest from the Boyd Plateau and plant foreign pines. 'I am strongly apposed to the planting of exotics within a national park' he said.

Only one per cent of New South Wales is parkland, a completely sub standard provision for a civilised country."

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## BLUE MOUNTAINS SPELEOLOGICAL CLUB TRIP REPORTS

# MAY - NOVEMBER, 1969

### TUGLOW

31st May, 1969.

## Trip Leader : Dave Ward

Aim : Photography and Exploration - Tuglow Main (T1)

After entering the cave, progress was extremely slow due to the quantity of gear and equipment. Being brought in due to a planned extended duration of caving - in the vicinity of 15 hours.

From the River Cavern to the Book Chamber, the progress again was slow as members were being cautious with packs and equipment on their backs. Prior to the Book Chamber, two new passages were entered, both of which enter the Book Chamber in the floor. One of the passages became a tight corkscrew squeeze. On entering the chamber some time was spent in photographing the decoration.

From here the party made their way to the "Left-Hand Extension". At this point the party split into two groups, photographic and exploration. The party reunited after 4 hours and had an underground meal, the only problem encountered with this was trying to keep warm during the tea-break.

Returning to the Book Chamber, the party again split in a number of groups for general exploration. One group, while pushing their way through a small upper passage, detected a faint stream of fresh air. This is at a later date to be surface correlated.

Upon the party reuniting once again, we headed out of the cave. It was interesting to note that as most of the party were getting extremely tired, some became quite short-tempered, a point worth rembering in extended caving periods.

# WEE JASPER

### Trip Leader : Ian Bogg

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Aim : Fossil Examination and General Exploration

To fulfil one of aims; i.e., examination of Fossil, we entered the "Dip Cave" via the rubbish tip (WJ1).

We headed to the Daylight Chamber via the Upper Level route. This is very interesting as cave development differentiates greatly as compared with the rest of the system. Some time was spent investigating guano deposits for cave life without success.

Arriving at the Rat Hole, a delay was met due to a party of scouts coming out. Eventually we passed through the Rat Hole, then headed for the Fossil. This was examined and a small section of vertabrae removed to aid identification. The party then headed for the Dismal Chamber. There is plenty of evidence of decoration instability or could it be wanton desceration.

On returning to the Rat Hole, again a delay due to a party of scouts coming in. It is a pity that this group of scouts were not conservationists, however, things improved a little after a gentle reminder. Nevertheless, we finally emerged after some frustrating delays.

On Sunday morning we entered the Punchbowl Cave (WJ8) via the 70 ft ladder pitch. In order that all the party could enter and return safely, a running bottom belay was set up. With all the party in the Punchbowl, we headed for the Far Chamber from which we carried out a general exploration. Sections new to B.M.S.C. were located, however, others had been there before us. At this stage caving became most annoying due to the attitude of a large party of scouts (28).

One section proved to be an obstacle which was a large flowstone covered face approx. 15-20 ft high in the Ante Chamber. It was planned to return at a later date with sufficient gear to scale this face and to probe this extension further. After a good deal of exploration, the party headed back to the Pitch Chamber spending a good-deal of time in the Ballroom probing for the second "Mythical" Punchbowl - Signature Caves' link, again with no success.

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When we reached the ladder, we found that the running belay would not work. As we could not establish contact with anyone at the top, it became necessary for a member to ascend the ladder without a safety line.

On reaching the top it was found that someone had tied-off the belay making it totally inoperative. After all the party was out we had a look in "Anemone" (WJ26 & 27) on the way back to camp.

The Dog Leg was also visited but unfortunately we were stopped by water.

Later that evening a visit was made to the Signature again probing for the so called "Mythical" link ~ again we had no success but members became quite familiar with the Signature System.

The Signature sojourn concluded an enjoyable weekend's caving.

## TUGLOW

12th - 13th July, 1969.

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<u>Trip Leaders</u> : Ian Bogg & Dave Ward <u>Aim</u> : Further Exploration - Tuglow Main (T1) and Familiarisation of Window, Plasticine and Moon-Milk Caves (T23 & 24 resp.)

The party was split into two groups -

1. Tuglow Main Exploration Group;

2. Window, Plasticine and Moon-Milk Group.

GROUP 2 spent the Saturday familiarising themselves with the Window, Plasticine and Moon-Milk Caves and locking for possible digs.

GROUP 1. Main objectives were photography in the Book Chamber and exploration of the waterfalls and lower solution passages beyond the Book Chamber.

The members photographing in the Book Chamber managed to achieve some excellent results. During the photographic session they recorded the cave temperature, this being 59°F.

The party exploring the waterfalls found that it is extremely difficult and dangerous to decend a ladder engulfed in water. However, with safety precautions taken there were no mishaps except for getting wet and becoming cold. For this trouble the party did not make any exciting discoveries apart from increasing their knowledge of this particular system.

The party then returned and reunited with the photographic group and after sorting and collecting gear, made their exit.

On Saturday evening some members left leaving the bulk of the party behind to continue surface exploration Sunday. This group located a number of holes - these have been noted for further exploration at a later date.

<u>NOTE</u> : Earlier this year, B.M.S.C. members located another cave. This has been provisionally called "Moon-Milk Cave" due to the excellent and heavy Moon-Milk crustations and arbitarily numbered T4.

# WYANBENE

<u>25th - 27th July, 1969</u>.

## Trip Leader : Dave Ward

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Aim : Familiarisation and Potential Assessment

On entering the cave we made the decent via an old steel ladder, a relic from the tourist days. At the bottom of the ladder we found ourselves at a small watercourse which was flowing quite steadily. After a short walk we climbed up about 15 ft through a squeeze where there was a substantial flow of air passing through. After the squeeze, we were confronted with a 15 ft ladder pitch. The ladder was securely belayed and the descent made without any incident. After following the water for some time, we came across a squeeze in the floor, which led directly to the water again. We then proceeded about 100 ft in a semi-crawl position and then left the water through a spiral squeeze to the right. This passage ultimately bi-passes the remainder of the water crawl.

After continuing along the passage, we were confronted with a 10 ft high mud slide which, at first, appeared to have no hand holes. After negotiating this slide, we pushed further on to a difficult squeeze just above the water. It was from this particular point that the rest of the system was apparently discovered in 1966. From here we proceeded to climb a rock fall and look for the way to "Ceasars' Hall". To the right a hole was located which was followed. Through another squeeze we found that we were in an unusual cavern which was about 40 ft by 50 ft in diameter with sloping walls which seemed never to end as the lights would not penetrate the darkness. The floor was fairly wet and was covered with a lot of loose shale. We decided that this cavern must be the "Gun Barrel".

After exploring for the way on with nc success, we decided to turn back which turned out to be rather tricky in itself. However, we eventually found our way to the rock fall, back through the water squeeze, down the atrocious mud slide, back through the tight squeeze then proceeded to the water crawl where we met some members of C.S.S. After an uneventful trip, we were delighted to find other B.M.S.C. members at the entrance.

<u>COMMENT</u>: The cave system runs basically straight for approximately 2,000 ft. Age of cave is Upper Silurin (A.S.F. Handbook). Sections seen on the way to the "Gun Barrel" were either inactive formation or devoid of formation, with the exception of the Helictite Wall and an area near the "Prison Bars".

> On entering the system, air flow was coming cut and when leaving the cave, the air flow was reversed. The water in the cave was dirty and muddy as compared to

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other cave systems; 50% of walking area is water and the remainder  $\frac{1}{2}$  inch mud. If any variation in water level occurred, it could be a difficult passage to encounter.

There was no large chambers encountered with the exception of the "Gun Barrel", however, we believe that there are more chambers and better decoration further in and for this purpose, another trip should be planned in the New Year.

### TIMOR

## 8th - 10th August, 1969.

# Trip Leader : Ian Bogg

Ain : Speleotherm Study and Specimen Collecting

The group spent the Saturday morning exploring the Belfrey Cave (IC2). The members who entered the "Gas Hole" reported that there has been some extensive excavation conducted since February. The remainder of the system was fully explored with some time being spent studying the "Helix Land Snail" deposits and a general discussion re the sponge like Relief ceiling. Both these points stimulated a good deal of interest and discussion.

After leaving Belfrey Cave, the group split into two, with one group exploring the Helictite (IC4) and Shaft (IC3) Caves. They were horrified at the level of vandalism which has occurred to these caves. In particular, the Helictite Cave which apparently was profusely decorated.

The other group headed up the ridge to locate Timor Main (IC1). This was eventually located and during the course of searching, located numerous shafts on top of the ridge. The party entered Timor Main and were amazed at the size of the chamber, (125 ft by 45 ft x 26 ft high. Ref. A.S.F. Handbook) and after a short tour, headed back to camp.

After lunch with an additional starter we headed back to

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Timor Main to fully explore it, and other holes found earlier that morning. Timor Main was found to be not very extensive as previously thought, however, there was enough to keep the group interested. We found no evidence of CO<sub>2</sub> as mentioned in the A.S.F. Handbook. The holes on the ridge were blocked with cave fill and were not extensive but could be promising with some hard excavation.

After tea a visit was made to the Hill Cave (IC7) which consists of a series of chambers at different levels. Isolated sections are heavily decorated with active straws. There is very little evidence of vandalism in this cave due possibly to the difficulty in finding the way through the initial crevices. Prior to entering the Lower entrance was blocked. This was unblocked after some difficulty but on leaving the Hill Cave, this was blocked up again.

Sunday morning saw the entire group back in Timor Main where some excellent photographs were taken especially of the Large Central column. These photographs were taken using candle for highlighting features and with magnesium ribbon. In one particular section a good deal of interest was aroused and a number of theories postulated re roof formation and for future reference photographed. The morning's activities concluded on a high note thus a good weekend had by all.

BUNGONIA

# 23rd August, 1969.

<u>Trip Leader</u> : Ian Bogg <u>Aim</u> : Demonstration by H.C.G. of G.Q. Paraguard Rescue Stretcher

B.M.S.C. accepted an invitation extended by H.C.G. to witness a demonstration of a lightweight stretcher and to determine its efficiency in cave rescue work.

The stretcher was first demonstrated on the surface. B.M.S.C. supplied a patient who was a guinea pig to evaluate the harness features while being hoisted both vertically and horizontally.

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The group then proceeded deep into the Grill Cave (B9) where the similated rescue would begin. B.M.S.C. showed true form again by supplying a female patient for the rescue. The trip out included two 30 ft pitches where lifting gear was set up. The

first pitch presented problems caused by an overhand and due to lack of equipment this was subsequently abandoned and then the patient was 'manhandled'up the old tourist ladder. The next pitch was successfully negotiated owing to the satisfactory positioning of lifting tackle and guide lines. The patient was then effectively brought out of the cave.

<u>SUMMARY</u>: The development of a stretcher for cave rescue work should and must be a priority. Stretchers such as the G.Q. Paraguard developed for mine rescue work have definite limitations. This could be a worthwhile avenue of investigation by the A.S.F. Cave Safety Sub-Committee!

With the demonstration completed, the party trogged the area and dropped into B6, 12, 15, 16, 22, 23, 25, 40, 42, 45, 50 & 51 so that some members could become familiar with these holes. CO<sub>2</sub> was encountered in B15 only.

A good deal of time was spent in the Fossil (B5) and with no  $CO_2$  detected, this was quite extensively explored. The lower B4 & B5 interconnection was filled with water and prevented us from entering B4 so we returned to the surface.

Due to bad weather setting in, any further caving was abandoned for the weekend.

#### COLONG

13th - 14th September, 1969.

<u>Trip Leader</u> : Dave Ward Aim : Familiarisation

The track was followed from the campsite to Lannigan's Creek.

On reaching Lannigan's Creek we followed it up stream 3-400 yds where we noticed the cave efflux. We climbed up about 50 ft to thearchway and after a quick tour we climbed up the hill to Colong Cave where we decided to do a surface trog. A few small holes were located around the base of the limestone bluff.

After a ccuple of hours we entered Colong only to meet a party of secuts coming cut who informed us that they had run a ball of string to Wolf's Cavern, a total length of 1800 ft. The main passage was followed to the King's Cross intersection where the visitors book used to be, but, now gone astray. Most of the passages were around 4-7 ft high and gradually dropping all the way. There are a few small passages going off from the main passage. We encountered no tight squeezes, only a tricky traverse with few foot holes. The system was fairly dry with not much decoration. Most of the decoration consists of straws of helictites. We were disappointed on entering Wolf's Cavern because of very little decoration contained in it, however, the size was more than we imagined.

We found our way to the lower level into some very clean and active decoration. These passages being duly explored and at this stage we decided to make our exit.

On the way out we climbed down a 30 ft vertical hole in the floor into the lower level which contains several water courses. At one particular point of the water course a pool which became dry during a 10 minute rest period had us mystified. After having a look around in another small cavern, we returned back to the water course only to find the pool full of water. Mystified, we went looking for an explanation and found that some small pools apparently fill up and overflow causing what is known as the Pulsating River? We then climbed up out of the lower level and made our way to the entrance with the bats.

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#### JENOLAN

27th September, 1969.

Trip Leader : Ken Pickering Aim : Survey and Surface Exploration

After arriving at Jenolan and checking in with Frank Harman (Chief Guide) we headed downstream to relocate a cave found in September 1968 in the Eastern Limestone (said to be eastern leg of Anticline etc ?). The cave was relocated. It consists of four (4) stages:-

1. 30 ft of crawlway and tunnel.

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- A section dubbed the "Antechamber" with some large but inactive stalactites and shawls. The chamber is approximately 10 ft high by 11 ft wide.
- 3. Main Chamber is roughly a cylindrical room 25 ft diameter by 25 ft high with very good decoration - clean white flowstone and shawls with some coloured red and black for contrast. In the floor of the chamber there are two (2) exits for the water which must still flow into the cave. One is a very small hole directly beneath the fourth section. The other is a muddy tunnel which goes on for 8 ft before it closes in. Attempts were made to enlarge the tunnel but were abandoned when rock was struck.
- 4. The final stage is a tunnel 22 ft up the wall of the chamber which goes for 17 ft before closing in. There is a heavy accumulation of guano in this tunnel.

After members had familiarised themselves the party was split into two (2) groups - surveyors and surface troggers.

The cave was surveyed to C.R.G.4 and during the survey collected some insect specimens. They collected a pseudo scorpion and spider : while from a small rimstone pool a sample of small microscopic white aquatic "animals" were taken. They appeared to be feeding on a slight scum which partly covered the pool when viewed under an illuminated magnifier. With specimens carefully preserved, the party joined the remainder to find that the "surface troggers" had located another cave upstream.



This cave was located to one side of a granite screes slope and consisted of about 80 ft of crawl passage with numerous side passages leading off in all directions apparently wombat burrows. At the far end there was a trickle of good drinking water. A small amount of decoration can be found. If we ever get some wombat-size member(s), this cave could have possibilities.

The surrounding hillside was trogged further and more massive limestone found with a few shelter caves in it.

The area seems worthy of further exploration as there are also holes on the southern side of the river but as time did not permit these were not investigated.

NOTE : All specimens collected are awaiting positive identification.

#### WEE JASPER

#### 4th - 6th October, 1969.

<u>Trip Leader</u> : Ian Bogg Aim : Familiarisation and Exploration

As the majority of our party had not visited the Gong Room, this was to be the first cave.

A short length of ladder was dropped down the entrance shaft and securely belayed. The descent was about 20 ft and with all the party inside we followed a passage for about 250 ft of which there was little formation of any significance. At the end of the passage we went through a duck-under only to turn in the direction that we had just come from, as the system was parallel to each other. This passage was followed for approximately 150 ft to the Gong Room. There is some good shawl and straw formation. On our way out we stopped to find the impenetrable slit. When we were all out there were quite a few other parties waiting to enter.

That afternoon some members trogged around the main outcrop.

We were surprised at the size of the PunchbowlDowne which was about 100 ft diameter by 80 ft deep. The small caves at the bottom were fully investigated. On the way back to camp the Dog Leg Cave was entered but progress was stopped after a short distance by water.

That evening we descended into the Punchbowl (WJ9) and made our way to the Antechamber to push on beyond the flowstone which stopped us on a previous trip. After a fair amount of effort the flowstone was scaled and rigging up a ladder the rest of the party followed. There were a number of passages leading off; these were probed but unfortunately led nowhere. With no success we then headed out.

Sunday morning say the party in the Church Cave (WJ31). The top section was pushed first and then the lower section. This cave was very humid and quite warm, decoration is limited. On the way out we noticed another party had entered and we were happy with our safety standards after a lock at how their ladder was rigged.

Early in the evening saw the party in the Signature Cave for general exploration. When we returned to the Upper Level we met a group of people with violins who were experimenting with cave acoustics. It was enjoyable to listen to and was a most unusual way to conclude a good weekend's caving.

FOOT NOTE : Temperatures - Gong Room 65°F., Church Cave 68°F.

CLIEFDEN

11th - 12th October, 1969.

<u>Trip Leader</u> : Ken Pickering Aim : Familiarisation and Photography

Saturday morning after meeting as arranged at Mandurma, we headed to Dunhills for the keys. Unfortunately, the required keys were not available due to the fact that they were not returned to Bruce by so called speleos on the previous weekend. Camp was made on the ridge because overnight rain had made the Transmission Flat track too slippery.

First on the list was Big Cliefden (CL1) entered via the top entrance. After a tourist circuit of the Big Chamber the party headed down to the Laurel Rcom. It is a pity to see good decoration defaced by the unornimental, unsightly application of mud. The party then proceeded to the Boot Room where a good deal of time was spent in the Jewel Extension photographing, admiring and discussing the mass of decoration. The helictites, Dog's Tooth crystal is some of the best seen by members of B.M.S.C. After temporary disorientation in the Boot Room the party left via the lower entrance.

Saturday evening some members visited the Murder Cave (CL2) to see and photograph the Mamalian Skelton and the Blue Stalactite, both of which interested the members who had not seen them before.

Sunday morning the party split with the more energetic members doing a surface trog while the remainder left for home.

For those members not previously familiar with the caves entered, they found Cliefden true to form; i.e., humid with mud and more mud and more mud.

#### COLONG

## 18th October, 1969.

Trip Leader : Ron Thomas

<u>Aim</u> : Familiarisation and Introduction to Caving for Potential Members - Colong Cave (C1)

After locating and entering the cave the party headed for Kings' Cross. From here the middle passage was followed along the high tunnel through to Shoejammer Squeeze. Every hole and passage was investigated and finally following a steep passage into another chamber, around the flowstone terraces and along more passages, the party came back into Kings' Cross. After following more passages and returning to the same area it became evident that we were in a maze. After popping in and out of tunnels and heles for quite some time, we found that time had run cut so we had to return to the surface. However, the prospectives enjoyed their introduction to the realms of caving.

#### ABERCROMBIE CAVES

15th - 16th November, 1969.

<u>Trip Leader</u> : Ken Pickering <u>Aim</u> : To assess potential of non tourist caves and possibilities of further discoveries.

At the onset it should be noted that the details given in the A.S.F. Handbook are incomplete. The Kohinoor Cave and Hall of Terdischore hardly warrant mention as separate caves within the Archway. There is a similar situation known as King Solomon's Temple, which is not mentioned in the Handbook. The Hill and Pulpit Caves are two different entrances for the one cave known as the Bushrangers' Cave.

The three other outside caves mentioned in the Handbook are presumably those shown on Trickett's Map. The two Southern Caves were not entered. Of the tourist caves only the Grove Cave was not entered. One of the three unnamed caves in the Handbook, known locally as the "Bushrangers! Stable" was found to be connected with one of the holes we investigated.

This hele is lecated in a saddle more than 100 ft above Creek level and appears to be formed by collapse rather than solution action. It descends some 30 ft before splitting into two vertical shafts. One of which is approximately 30 ft deep and has a horizontal tunnel at the bottom which is worth further exploration. The other leads into a fairly large dry chamber inhabited by wombats. A long narrow passage leads from this chamber to the cave shown by Trickett, which is a large open camping cave at Creek level. Both shafts have heavy crustations of "Moon Milk" damaged by some recent visitors. Another significant cave was found east of the above mentioned cave. This has two entrances which join together about 10 ft below the surface and continues on a steep slope for about 100 ft. In parts it is very tight. Decoration is pretty but isolated. A number of crickets and other forms of cave life were observed.

Three large impressive holes were located at the southwestern corner of the Archway, unfortunately, these do not appear to extend but they could possibly be Trickett's "Opening to Surface" ? Four holes were located in a high limestone pinnacle at the north-eastern corner of the Archway, two of which were blocked with cave fill at about 20 ft deep. Another hole is about 20 ft deep and strangely enough is one of the most heavily decorated caves in the **ar**ea. The other hole is a rough ho**r**izontal tunnel with a very low squeeze about 10 ft from the entrance.

<u>FURTHER WORK</u>: The limestone outcrops downstream should be explored also the two remaining caves shown by Trickett should be investigated.

<u>COMMENT</u> : It was a pity to see recent emblazonry on the ceiling in the Long Tunnel produced by a 'responsible, conservation minded, accredited A.S.F. Member Society! '

## TUGLOW AREA

15th - 16th November, 1969.

Trip Leader : Barry McWilliams

<u>Aim</u>: To establish an alternate route to Tuglow Caves via the Mt. Werong Fire Trail and to determine limit of two wheel drive vehicular access.

The party proceeded to the Mt. Werong Road via Shooters Hill and Jaunter. After probing a number of trails off the Mt. Werong Road without success, we were eventually given the directions by

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an obliging Water Board representative.

Following the road for some distance, we turned to the right which appeared to be the correct fire trail. After approximately 3 miles, we were confronted with a creek crossing. Due to recent heavy rain it was about 60 ft wide experiencing some problems but we eventually succeeded in getting the Land Rover across. After following a ridge for a short time, we left the Land Rover and proceeded to a high point on the ridge as the fog and mist was closing in and visibility was poor.

Next morning we returned to the ridge and located Cockerills Lockout Trig Station and after map consultation we decided to return to the main road. When we reached the main road, we followed it further down for a while only to see a notice pointing to "Kanangra Walls Road via Kowmung River".

Following the fire trail which was in fair condition for 3 miles, we eventually went down some fairly steep hills towards a large river flat. Off to the end of the flat was a creek called Tuglow Hole Creek which had a fair volume of water flowing and a rocky bottom. This could possibly be the limit of conventional drive vehicular access. The road continued for  $1\frac{1}{2}$  miles to the tee-intersection turn-off to Tuglow Caves. With out basic aim fulfilled, we returned home, however, we will return in the near future to investigate some eutcrops located during cur excursionary tour.

JENOLAN

29th - 30th November, 1969.

<u>Trip Leader</u> : Ken Pickering <u>Aim</u> : General Exploration and Familiarisation in the Mammoth Cave (J13)

The cave was entered via the 70 ft free-hanging ladder pitch, taking about one hour to get the party of 10 inside.

Between the "Forty Foct" and the underground river, several

specimens were collected, including a pseudo scorpion and several beetles.

From the Oclite Chamber, two ways were located but due to the size of the party and the lack of equipment, these were not pushed. The party returned to the top of the "Forty Foot", examining every side passage as they returned and then entered the "Railway Tunnel" area. We were impressed with the size of this chamber. A long solution tube that tended in a northly direction to its extremity, however, we could not be certain that we were even at the end. This section was interesting for the fact that several Rainbow Trout, some in advanced stages of decomposition, were trapped in pools left by recent heavy rains.

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The party returned to the surface via the ladder and lower entrance owing to the fact that the blockage (concrete) has been removed.

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